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# ESSAYS ON STRATEGY

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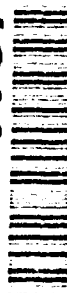
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- Hard Choices on Chemical Weapons
- US Airlines and Defense Airlift
- The Panama Canal After 1999
- Antisatellite Weapons
- Chinese Arms Sales
- Strategic Defense
- Post-Cold War Strategy
- Revival of Flexible Response
- Forward, Mobile Military Strategy

Edited by THOMAS C. GILL

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— VII —

Edited by  
THOMAS C. GILL

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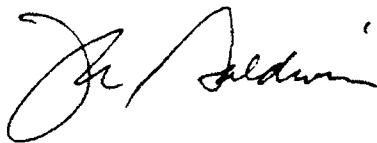
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## FOREWORD

Revolutionary developments in Europe and their global reverberations since 1989 have affected certain aspects of our national strategy. We are, for example, revising our conception of the Warsaw Pact nations as a single entity and our perception of Soviet objectives, motives, and influence.

Of course, the world remains a dangerous and unstable place. The brutal aggression of Iraq in Kuwait, the renewed threat of conflict in Africa, fear of nuclear war between India and Pakistan, the uncertain future of the republics within the borders of the USSR, and the increasingly more lethal weapons in the hands of terrorists certainly bear witness to the dangers looming around the globe. In this unstable environment, the search for fresh ideas and new perspectives on old problems is more important than ever.

This volume presents nine essays dealing imaginatively with the issues of the post-Cold War period. One of them addresses general US strategy for the 1990s. Three focus on high-level strategic matters: the future of flexible response, anti-satellite weapons, and forward, mobile defenses. The others address US chemical weapons policy, use of civilian aircraft for defense airlift, neutrality of the Panama Canal after 1999, arms sales by China, and strategic defense at reduced cost. Most of these essays won recognition in the Chairman, Joint Chiefs of Staff Strategy Essay Competition, which continues to inspire creative thinking among the students at the Army, Naval, and Air War Colleges, the National War College, and the Industrial College of the Armed Forces.



J. A. BALDWIN  
Vice Admiral, USN  
President, National Defense University

## ESSAYS ON STRATEGY

# 1

## HARD CHOICES ABOUT CHEMICAL WEAPONS

STEPHEN ROSE

TWENTY YEARS AGO, THE UNITED STATES UNILATERALLY DISBANDED its biological warfare program. According to the wisdom of that time, germs and toxins were crude, uncontrollable weapons of little military value.<sup>1</sup> In recent times, however, analysts have begun to warn that biological agents are now on the verge of becoming flexible weapons perhaps even more dangerous than nuclear arms.<sup>2</sup> What has led to this complete turn-around in analytical thinking?

The answer lies in the revolution in biotechnology, especially in genetic engineering, that began during the 1970s. Recently developed techniques permit the manipulation of key biological processes with a precision and power not dreamed of twenty years ago. Gene-splicing allows the transfer of toxic features of one biological agent into another. Science can now reshuffle the genetic deck of micro-organisms to produce a theoretically unlimited number of combinations, each with its own unique blend of toxicity, hardiness, and incubation characteristics. In short, it is becoming possible to synthesize biological agents to military specifications. Thus the world stands on the threshold of a dangerous era of designer "bugs" as well as designer drugs.

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Commander Stephen Rose, US Navy, wrote this essay while studying at the Naval War College. The essay won recognition in the 1989 JCS Strategy Essay Competition, and was previously published in slightly different form in *Naval War College Review* (vol. 42, no. 3, Summer 1989, pp. 6-29).

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Two factors amplify the military significance of this revolution. First, the new biochemical processes are relatively cheap, easy to master, and accessible to all. For this reason, many more players, ranging from superpowers to Third World states to terrorist groups, can now enter the arena of what is known as "biochem" warfare. Second, the new technology inherently favors offense over defense. Although toughened by a million years of evolution, the human organism remains quite vulnerable to biochemical attack. Several of the new supertoxins are ten thousand times more potent than nerve gases now in military arsenals. According to one view, "nerve gas, which has created a worldwide furor, is mere perfume compared to some agents on the drawing board."<sup>3</sup> Moreover, it is becoming possible to design organisms that resist all known treatments and might take years to counter. The potential scope of this problem is illustrated by the billions of dollars and years of effort already expended to find a defense against a naturally occurring biological phenomenon—the AIDS virus.<sup>4</sup>

As novelists are fond of reminding us, biotechnology could conceivably unleash the equivalent of a home-made "Andromeda strain"—a pathogen so demonic that it results in global catastrophe. In the judgment of most knowledgeable experts, however, the more realistic threat lies in gene-splicing's powerful ability to recombine bits and pieces of known organisms in a nearly limitless array. As one government official described the problem, "new [biological warfare] agents can be produced in hours; antidotes may take years."<sup>5</sup>

### PRESSURES AND PERILS OF PROLIFERATION

A KEY IMPLICATION of this emerging technology is that weapons of mass destruction threaten to become commonplace. We are entering an era when tiny nations and

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terrorist groups can arm themselves with biological and chemical weapons of great destructiveness—a poor man's atomic bombs. For example, Muammar Qaddafi has long sought a nuclear capability for Libya. Thus far, he does not appear to have succeeded in that quest. Recent reports suggest, however, that Libya is now developing both biological and chemical weapons.<sup>6</sup> Should his nuclear quest continue to be thwarted, it is likely that Qaddafi's long-touted "Moslem bomb" will be some kind of biochemical weapon rather than an atomic one.

Aside from Libya, an estimated ten to twenty other nations have biochem weapons, with this number expected to double in the coming decade.<sup>7</sup> Current technology permits even backward countries to achieve, in this way, a quasi-nuclear status at bargain basement cost. The technological infrastructure required to develop an atomic weapon is far more complex and expensive than that needed to produce sophisticated biochemical weapons. The same processes used to make fertilizers and pesticides can also churn out poison gases; similarly, bulk toxins could be manufactured at a gene-splicing facility set up at modest cost and based on techniques openly available in the scientific press. Poor, non-nuclear nations caught up in regional arms races or feeling themselves menaced by heavily armed neighbors are beginning to invest in biochemical weapons as a relatively cheap but potentially nasty deterrent.<sup>8</sup>

In the decades to come, many additional nations are likely to acquire such arms. Proliferation of biochemical weapons is part of a broader cycle of global diffusion of political, economic, and military power. As the international alignment continues to shift from a bipolar to a multipolar world, weapons of mass destruction will also spread. By the end of the twentieth century, as many as 35 nations could possess stockpiles of nuclear, chemical, or biological weapons. Aside from placing many new fingers on the triggers of mass destruction, such a

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development would also diminish superpower freedom of action. As time passes, conclude the authors of a landmark report on *Discriminate Deterrence*, "the arsenals of the lesser powers will make it riskier and more difficult for the superpowers to intervene in regional wars."<sup>9</sup> With the spread of biological and chemical weapons, even small nations will gain the capability of dealing out punishing counterstrokes against an intermeddler.

The good news is that none of the Third World countries suspected of developing biological weapons has, thus far, turned to genetic engineering to create novel organisms.<sup>10</sup> The not-so-good news is that at least a dozen countries are hard at work on toxins and chemicals. The bad news is that many of those countries, particularly in the Middle East, are actively shopping for missiles and other delivery systems to extend the reach of their new biochemical arsenals. The worse news is that the 50-year tradition of not using biochemical weapons in battle has broken down during the past decade in a series of regional conflicts. Worst of all, the lesson demonstrated to many by Iraq's use of poison gas against Iran is that the military benefit gained substantially outweighed any price paid in terms of international censure or economic sanctions.

Widespread use of chemical poisons in the Iran-Iraq war may have lowered the threshold for future use of biological weapons as well. This erosion of ancient taboos is being accelerated by the new biotechnology, which not only blurs the distinction between biological and chemical processes but also provides a framework for *controlled* biological warfare. Thus the proliferation of biochemical weapons gathers momentum from three trends: a search for economical deterrence, the weakening of old taboos, and the advent of a new and powerful technology ripe for exploitation.<sup>11</sup> In short, some countries are beginning to view biological and chemical weapons as both useful and, under certain circumstances, usable.

### *HARD CHOICES ABOUT CHEMICAL WEAPONS*

The Middle East offers a case in point. The current scramble for chemical armaments in this region adds a dangerous twist to an already volatile situation. In the estimate of CIA Director William Webster, "the spread of chemical weapons among the Arab states, principally Iraq, Libya and Syria, could seriously alter the regional balance of power."<sup>12</sup> This threat will intensify as countries obtain quantities of missiles capable of lobbing biochemical warheads throughout the region.

Thanks to Soviet largess, the Syrians already have a supply of SS-21 missiles able to send warheads into neighboring states with considerable accuracy.<sup>13</sup> During the Gulf war, Iraq successfully modified a number of short-range Scud-B missiles, tripling their reach to nearly 600 miles. Egypt is reported to be hard at work, with help from Iraq, building the Badr-2000, with a range comparable to the modified Scud.<sup>14</sup> Finally, Israel served notice with the September 1988 launching of its first satellite that it, too, has the technology to deliver advanced ballistic payloads.<sup>15</sup>

For decades Israel and its Arab neighbors have faced each other like proverbial scorpions in a bottle. As biochemical warheads continue to spread through the Middle East, this analogy becomes increasingly apt. Virtually every city in the region will be vulnerable to the sting of a formidable, potentially lethal attack.

In the past Israel has enjoyed a regional monopoly over weapons of mass destruction. The one direct challenge to its presumed nuclear stranglehold—Iraq's effort to build an atomic weapon in the late 1970s—ended in the bombing of the main Iraqi research reactor in 1981. Similar preemptive strikes would be less useful in curbing the spread of biological and chemical weapons. "If a country is serious about acquiring chemical weapons, it is hard for another country to eliminate that capability the way Israel knocked out Iraq's atomic bomb program," concludes one analyst. "These weapons can be made and



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stored in small sites all over a country, and you can never be sure you got them all."<sup>16</sup> This statement is equally true for biological and toxin weapons. Like their chemical cousins, these agents can be prepared and stored in small facilities requiring relatively little capital investment. A batch of anthrax capable of killing millions of people, for example, could be concocted in a "room the size of a broom closet."<sup>17</sup>

The present furor over the Middle East balance of power centers on chemical agents. In time, though, the biological side of the spectrum will come to be viewed as even more insidious and destabilizing; chemical weapons, in comparison, are crude. Despite their lethal effect, chemicals require bulk application to qualify as a true weapon of mass destruction. The nerve gases in modern arsenals are essentially refined versions of agents developed before the two world wars. Although some additional refinements can be expected, pure chemical agents are approaching the end of an evolutionary path. The menace of the future lies in biologicals—pathogens and toxins—which, thanks to the advancing power of genetic engineering, have a far richer potential for harm. If the proliferation of poison gas ends up making the 1990s a decade of chemical concerns, the largely untapped but nearly unlimited nature of the new biotechnology threatens to turn the next century into a diabolic era of military biology.<sup>18</sup>

### THE SOVIET PERSPECTIVE

THE SOVIET UNION has long treated the entire gamut of biological and chemical weapons as a valuable part of its overall warfighting capability. Military implications of the biotechnological revolution have not escaped the Soviets' notice. The magnitude of the Soviet effort to tap the dark side of this new technology is evidenced by the existence

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of at least seven highly secure biological warfare centers under military control in the USSR.<sup>19</sup> The scope of this program is mirrored by the multiple uses for which their biological and chemical arsenal is intended.

In general, the Soviets consider biochemical weapons to be excellent tools for sabotage and interdiction. Their doctrine emphasizes the need to prevent an enemy from effectively marshaling his forces. If the Soviets were to use biochemical weapons in an attack on NATO, a likely target cluster would be rear-area chokepoints such as airfields, supply dumps, headquarters, and port facilities.<sup>20</sup> The vulnerability of these sites is presently amplified by NATO's inability to mount biochemical strikes against similarly valuable targets in the Soviets' rear areas.

Another scenario for biochemical weapons use involves an attempt to impair NATO's resolve to shift to a wartime posture. "As an opening salvo," suggests Joseph Douglass, "the Soviets might well initiate a massive covert C/B war that could confuse the leadership of the Western alliance and distract their attention away from even more critical events."<sup>22</sup> As Soviet writers have already noted, governments that are preoccupied with widespread civilian panic on the homefront could suffer a crucial loss of time, will, and coordination during the period before conventional hostilities.<sup>23</sup>

On an even grander scale, the USSR may view its biochemical capability as a strategic lever to offset American advances in other technologies. According to one recent report, there is some official indication that Moscow "might retaliate against an American Star Wars defense system not with new missiles, but with germs."<sup>24</sup> As early as 1987, Valentin Falin, then head of the Soviet Novosti Press Agency, let slip the following comments about Moscow's possible response to SDI:

We won't copy you anymore, making planes to catch up with your planes, missiles to catch up with your missiles.

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We'll take asymmetrical means with new scientific principles available to us. Genetic engineering could be a hypothetical example. Things can be done for which neither side could find defenses or countermeasures. . . . These are not just words. I know what I'm saying.<sup>25</sup>

At the other end of the weapons spectrum, the Soviets have also begun to tailor biochemical weapons for purely tactical use on a limited scale. Several years ago the world was caught up in a heated controversy over "yellow rain"—ignited by US charges that Soviet-supplied forces in Laos and Kampuchea were using fungal toxins as a weapon against rebellious tribespeople. In 1982 the State Department issued several reports marshaling the evidence for yellow rain and estimated that use of this bioweapon in Southeast Asia had already led to 7,500 deaths.<sup>26</sup> Although many reporters and scientists continue to voice skepticism,<sup>27</sup> to this day the State Department has not withdrawn or softened its charges. The yellow rain dispute demonstrates how easily bioweapons can fade into ambiguity. As Stuart Schwartzstein observed, "there are great advantages in using weapons that are either very subtle . . . or where verification and identification is so difficult that arguments continue to rage over whether or not allegations of use are true."<sup>28</sup>

Although the Soviets are also alleged to have used yellow rain during their occupation of Afghanistan, they seem to have experimented with a new kind of biochemical agent as well. Reports from the Mujahedin rebels referred to a toxin spray known as "black rain" that incapacitated people so quickly they were frozen in place, unaware until regaining consciousness many hours later that they had in fact been attacked and immobilized.<sup>29</sup>

A common denominator in all these examples is the breadth and versatility of Soviet biochemical capability and doctrine. For the Soviets, a biochemical arsenal is a

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flexible and powerful tool—a frontline rapier as well as a global blunderbuss. As John Hemsley sizes up the situation, “it would appear that the Soviet High Command considers that current developments in novel CB agents ... [are] leading to a quantum, rather than an incremental, change in the nature and practice of war.”<sup>30</sup> In contrast, the NATO and US approach to biochemical weapons continues to suffer from an inherently defensive, makeshift posture that treats biochemical capability as an abhorrent deterrent to be kept as much as possible out of sight and out of mind.

## MILITARY UTILITY OF BIOLOGICAL WEAPONS

TO WHAT EXTENT do these developments, especially those arising from the revolution in biotechnology, require a shift in American military preparations? Not surprisingly, reasonable minds differ as to the strategic and tactical implications of genetic engineering. A key issue is the *usability* of biological agents.

One school of thought suggests that there may be less to the new developments in life science than meets the eye. In these analysts’ judgment, biotechnology

will not lead to the “ideal” BW or routinize biological warfare. That would require a higher level of protection and predictability than is likely ever to be possible. Effective weapons will always pose deadly risks for their maker. And no realistic genetic transformation will yield biological weapons that are suitable for theater operations.<sup>31</sup>

In other words, science might well make biological weapons more dangerous, but never sufficiently controllable. Thus, the very nature of bioweapons induces self-deterrence, both now and for a long time to come.

Other thinkers view the situation as more threatening. From their perspective, controllability may not be an

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insoluble problem. Already, "in the case of biological agents ... it is now possible to eliminate undesirable side effects ... [to] preserve and package agents more effectively ... to do more and do it safely."<sup>32</sup> In the future, the phenomenal versatility of genetic engineering could enable an attacker to retain control over its biological agent, for example, "by designing it to ... die off after a previously determined number of cell divisions ... [or] by designing the organism to be bound by a narrow set of environmental factors."<sup>33</sup>

The mysteries of biotechnology have just begun to be probed. At their core lie the basic secrets of life. According to many scientists, the next major exploratory step will be to map the human genome—a ten-year, \$3 billion effort to determine the exact location, function, and molecular structure of the 50,000 genes that human cells have in common. Human genes are the memory bank for our species—the cell's floppy disk governing all life processes at the molecular level. Precise mapping of such genetic blueprints, whether for humans or for other organisms, would greatly enhance the reach and sophistication of genetic engineering. Thus, as science marches on, the potential for controllable biological weapons will also advance and should not be discarded out of hand as a dead issue. What this all means in practical terms is that all dimensions of potential biological weapons use—strategic and tactical, overt and covert—must be monitored with great care.

*Overt strategic use of biological weapons.* The traditional scenario for germ warfare envisions an attack resulting in massive civilian casualties—devastation on a scale similar to the destructive effect of nuclear weapons. Biological weapons have been seen as inherently strategic in nature, and US policymakers assumed that a biological attack on a nuclear-armed nation could be countered with (and thus deterred by) another available weapon of mass

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destruction, nuclear arms. Therefore, when President Nixon dismantled the US biological weapons program in 1969, he did not worry about the disappearance of a like-kind retaliatory capacity. Three years later, similar considerations led the United States to support a sweeping arms control ban on biological weapons, even though the agreement lacked any procedures for verification. At that time, overt biological warfare was correctly viewed as a clumsy, indiscriminate weapon—an all-or-nothing proposition allowing no tactical finesse or useful strategic advantage.

In part, the rationale of the Nixon era still makes sense. Nuclear deterrence continues to restrain superpower use of biological agents against another superpower.\* In the words of a former director of a Defense Department laboratory responsible for identifying biological warfare agents,

one of the most awesome tasks I can think of [is] coming up with a definitive statement that we've been attacked with a biological weapon, knowing that that statement is probably equivalent to pushing the [nuclear] button. [The president] could always call the Kremlin and ask "What the hell did you do that for?" My guess is he wouldn't. He'd tape that message to the front end of a Minuteman missile.<sup>34</sup>

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\*An interesting feature of biological warfare is the absence of realistic options for counterforce targeting. Germs and toxins attack people (or livestock, crops, etc.) but not an enemy's retaliatory capacity, either nuclear or biological. By itself, a traceable biological attack is a perilous gambit: it would serve to provoke an adversary without immediately disarming him. In a struggle between superpowers, the only practical value of a massive biological warfare capability is to provide limited insurance against the possible neutralization of one's nuclear arsenal. In other words, at the level of strategic interaction among superpowers, overt biological warfare serves primarily as a back-up deterrent, not as a first-strike weapon.

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Key assumptions embedded in this scenario are that use of a biological agent would be both *traceable* and massive enough to qualify as a *strategic* threat. In times past, the relatively primitive nature of biological weapons made both assumptions nearly axiomatic. The new biotechnology complicates this old BW equation, however, by opening up novel possibilities for tactical and covert uses of biological agents.

*Overt tactical use of biological weapons.* One potential use of genetic engineering is the mass production of toxins, which are poisons made by organisms. Toxins occupy an interesting niche between biological and chemical weapons—more potent than most man-made poisons, but more controllable than living agents. Until now, the availability of toxins has been limited by a production bottleneck. Large numbers of living organisms and expensive, laborious processes were needed to yield even small quantities of toxin. Using refinement techniques available during the late 1960s, the US government generated only 11 grams of shellfish toxin from several tons of mussels. Biotechnology changes all this.

Through gene-splicing, micro-organisms can now be turned into miniature poison factories, permitting militarily significant amounts of toxins to be produced at far less cost and effort. Soviet use in Afghanistan of "black rain," believed to be a form of toxin weapon causing one-breath anesthesia, illustrates the tactical potential of such agents. According to an official US study, the Soviets are pursuing development of a broad array of natural and synthetic toxin weapons, ranging from extraordinarily lethal agents to ones that merely induce sudden panic, listlessness, or sleepiness.<sup>35</sup>

The obvious and chilling threat of lethal agents tends to divert our attention from problems posed by incapacitants. Nonlethal toxins could have a disproportionate effect because the natural reaction of people who are

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unaffected is to assist the stricken. In Joseph Douglass' estimate, incapacitants "can be militarily more effective [than lethal agents] because sick or disabled soldiers and dependents tie up scarce resources, demand the energies of those still healthy, and have a very demoralizing effect."<sup>36</sup> The crucial point is that toxin weapons theoretically can be tailored to create a wide variety of effects, depending on the tactical need.

*Covert use of biological weapons.* In the 1970s, Cuba charged that the CIA was clandestinely using biological agents to try to destabilize the island.<sup>37</sup> Allegedly, this campaign targeted vital crops such as tobacco (blue mold) and sugar cane (cane smut), livestock (African swine fever), and also the populace itself (hemorrhagic strain of dengue fever).<sup>\*</sup> Whatever the source, these outbreaks cost Cuba several billion dollars and 300,000 cases of debilitating disease. The Cuban charges highlight several reasons why covert biological warfare is such a potential menace—the difficulty of proof, the range of potential targets, and the substantial damage that could be inflicted by relatively cheap and easily concealed agents.

None of these problems is new. Even before the advent of genetic engineering, nations had at their disposal some nasty means for biological sabotage. Nature offers a veritable cornucopia of pathogens and maladies. What the biological revolution does, however, is expand both the size of the chessboard and the power of the pieces available for such covert operations.

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<sup>\*</sup>Military planners tend to evaluate biological weapons almost exclusively in terms of their threat as anti-personnel weapons. Just as important, however, is a biological weapon's potential for harming other life. For example, plants lack an immune system and are therefore especially vulnerable to biological attack. This susceptibility is magnified by the widespread use of monocultivation—i.e., the planting of genetically identical strains to boost crop yield—as an agricultural standard in Western countries. Monocultivation provides ideal targets for biological weapons.



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As previously discussed, the potential number and potency of biological weapon "chesspieces" increase dramatically as a result of gene-splicing's capacity for reshuffling the genetic deck in a controlled way. Nature is no longer the upper limit for either variety or virulence. More important, as genetic engineering increases in sophistication, so too will the subtlety and scope of covert biological weapons.

To suggest a hypothetical example, if (or when) a devastating new strain of wheat rust or pesticide-resistant fruit fly or AIDS-like virus pops up in America's future, will we be able to determine whether the source is a natural mutation or a genetic manipulation concocted by an adversary? Granted, these hypothetical examples seem rooted as much in science fiction as in reality. However, judging from advances in genetic engineering made in just over a decade, science appears to be overtaking fiction more rapidly than expected.

### QUO VADIS?

AS THE PRECEDING discussion suggests, a number of factors—including regional conflicts, Soviet capabilities, and the revolution in biotechnology—are converging to usher in an era of "soft" but deadly weapons. The problem of coping with this threat is here now, has grave implications for American security, and will grow progressively worse over time.<sup>38</sup> What can the United States do? The choices boil down to three basic approaches: (1) maintain the status quo, (2) take a patchwork approach, or (3) mount an aggressive defense.

#### **Status Quo**

America's current biological warfare doctrine involves two tracks: (1) defensive posture (no offensive biological weapons stockpile), and (2) deterrence (possible nuclear

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escalation in response to biological attack). The status quo approach would leave matters as they are. Unfortunately, the new biotechnology seriously weakens both prongs of this doctrine.

As we have already seen, the traditional notion of biological weapons being of only *strategic* significance no longer seems to be valid. At one point, when biological weapons were agents of relatively uncontrollable mass destruction, it may have been appropriate to threaten nuclear retaliation against an outbreak of plague warfare. But now that the tactical possibilities of biological warfare are beginning to emerge, this deterrent linkage is not as seamless and credible as it once may have been.

Would the United States use nuclear weapons, for example, in response to use of "black rain" or a biological campaign in Europe that sickened but did not kill the populace? Without the capacity for like-kind retaliation (as called for by US chemical warfare doctrine), there is a policy-force mismatch that invites mischief and miscalculation. As former Senator John Tower wrote in 1982, when arguing the need for a robust US chemical weapons capability, "the idea that we can credibly threaten to respond to a Soviet first-use of chemical weapons [during an attack on NATO] by resorting to nuclear retaliation should be as preposterous to the Soviets as it must be appalling to West Europeans."<sup>39</sup>

Similar pejoratives apply to the gap now opening up between American deterrence policy and the expanding world of bioweapons. Our nuclear umbrella cannot credibly deter tactical use of toxin or other limited biological agents any more than it can deter chemical strikes. As biological weapons techniques and agents continue to evolve, becoming more and more discriminate as well as harder to detect, the problem of finding a range of credible and proportional deterrents will also grow.

The other side of the US biological weapons posture—defense but no offense—is grounded on

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adherence to the 1972 Biological and Toxin Weapons Convention. The essence of the 1972 convention is a ban on possession of all biological and toxin agents, except small stocks retained solely for defensive research. Before the biotechnological revolution, this convention made some sense as a useful firebreak, since biological agents and processes then in existence were relatively unwieldy and unreliable. The new technologies, however, have potentially converted biological warfare from a major undertaking into a cottage industry—simple, cheap, quick, precise. Distinctions between research and production, between defense and offense, are now essentially meaningless. Counting missiles in their silos is child's play compared to tracking the thousands of facilities that could be used to produce biological weapons material.

By their very nature, such facilities are quite difficult to detect using standard technical means of verification—i.e., surveillance satellites and ground monitoring stations. "Unlike high energy physics experiments or the construction and testing of weapons delivery vehicles," notes John Birkner, "new biotechnology research efforts devoted to military objectives would tend not to reveal themselves."<sup>40</sup> Worse, advances in bioprocessing technology made during the past decade have magnified the detection problem by scaling down the size of facilities needed to produce militarily significant amounts of biological agents. A verification procedure designed to cope with these problems—the 1972 convention having no such provisions whatsoever—would have to be extraordinarily intrusive. Since the step from biological weapons research to production could be quite rapid, a comprehensive inspection regime might, as one director of a research institute glumly noted, "have to inspect the lab notebooks of every [biological] lab in the country."<sup>41</sup>

Summing up these concerns, the DOD official then in charge of negotiations policy, Douglas Feith, told Congress in 1986 that the 1972 Biological and Toxin Weapons

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Convention "must be recognized as critically deficient and unfixable."<sup>42</sup> Labeling the convention a "false advertisement to the world," Feith went on to explain that the primary culprit was the revolution in biotechnology. "Because new technology makes possible a massive and rapid breakout, the treaty represents an insignificant impediment at best." He concluded by suggesting that this potential for a quick breakout made the notion of a biological weapons treaty fundamentally unworkable. "Its principal failing, therefore, is no longer the absence of verification provisions or lack of effective compliance mechanisms, the commonly acknowledged shortcomings, but its inability to accomplish its purpose." Feith ended his remarks with the following pessimistic appraisal:

It is not a pleasant task to deliver so dismal a report to the Congress. . . . But can one responsibly inflate hope for an escape from the military problems posed by the Soviet BW programs? There can be no *deus ex arms* control in this arena. In answer to those who crave a constructive suggestion under even the least promising circumstances, one can recommend only: Defense.<sup>43</sup>

Overall, then, the status quo approach rests on two flawed premises—that the biological weapons genie can be kept on a tight leash through arms control, and that biological weapons can otherwise be held in check by strategic deterrence. Both prongs of the US approach invite more risk than seems prudent under the circumstances.

### A Patchwork Quilt

One variation from the status quo approach seeks to contain the biochemical problem through the cumulative effect of several interlocking initiatives—economic sanctions, export controls, an augmented defensive capability, and participation in arms control negotiations.

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*Sanctions.* During the Reagan administration other aspects of American policy clearly took precedence over a perceived need to keep the biochemical genie bottled up. Between 1986 and 1988, for example, when Iraq was using mustard and nerve gas to break up human-wave assaults during its war with Iran, the United States basically turned a blind eye to this breach of the biochemical taboo. Later, Iraq began to use similar agents to settle a long-standing feud with Kurdish rebels, and several nations called for tough trade sanctions. After some dithering, the Reagan administration came out in opposition to sanctions against Iraq,<sup>44</sup> and proponents eventually settled for diplomatic protests.

"The fundamental question," as John Kester sees it, "is whether . . . use [of biochemical weapons] by anyone will carry a real penalty—economic, political and perhaps military—even if enforcement injures Western economic or short-term political interests."<sup>45</sup> Thus far, developed nations have not been willing to stomach more than a taste of the required medicine, and during the past few years the United States has, sadly, been among the reluctant.

*Export controls.* The US track record regarding export controls is more favorable. In 1984 the Reagan administration began to clamp down on the transfer of equipment and materials directly contributing to biochemical weapons programs in other countries. In the long run, this is probably a futile effort, since many of the items in question have dual use in paints, plastics, and pharmaceuticals or are found in breweries, hospitals, and pesticide plants. The unwelcome truth is that even if the United States imposes stringent export controls, too many other countries are willing to let their business firms peddle biochemical technology to a world of eager customers.

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*Arms control.* Under a patchwork approach, however, the time gained by these delaying maneuvers of sanctions and export controls can be put to good use in trying to fashion a workable arms control regime for biochemical weapons. The expert consensus is that effective worldwide control of biological and chemical agents is probably a chimera—but is nonetheless worth striving for. Diplomats at the Geneva Disarmament Conference have been searching nearly twenty years for an acceptable formula that would lead to a comprehensive, verifiable, global ban on chemical weapons. As with biological agents, the main stumbling block to an effective chemical weapons treaty has been the bugbear of verification. According to William Burns, Director of the US Arms Control and Disarmament Agency, “no country in the world has offered a system which has a reasonable chance of verification.”<sup>46</sup>

Part of the problem is that chemical weapons can be produced by the same type of factories that turn common chemicals into fertilizers, pesticides, and pharmaceuticals. Worse, these plants could be switched from one production line to the other—from agents of well-being to agents of death—within a 24–48 hour period. Accordingly, a ban on chemical weapons would require continuous monitoring of some of the world’s most basic industries. Although the Soviet Union and the United States have agreed in principle on the need for short-notice challenge inspections as part of any chemical weapons treaty, negotiations have bogged down on the inevitable issues of how, what, when, and where. In addition, several major countries, primarily China and India, have not yet accepted the principle of on-site challenge inspections.<sup>47</sup>

Another complication is the recent Arab call for linking any ban on chemical weapons to progress in nuclear disarmament.<sup>48</sup> The heavy Arab investment in biological and chemical weaponry is intended, in part, to offset

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Israel's possession of nuclear arms. From the Arab perspective, a ban on chemical weapons would be discriminatory so long as Israel retains *its* weapons of mass destruction. Without Arab participation, a chemical weapons treaty would be stillborn—even if the verification quagmire can eventually be navigated.

This having been said, some kind of a chemical weapons convention will likely emerge from Geneva during the next few years. The belief is growing that even an imperfect ban would be preferable to galloping proliferation. As Brad Roberts puts it, "The choice, practically speaking, will be between a partially disarmed world and a wildly proliferating world."<sup>40</sup> To wait is to court increasing danger, especially in the Middle East cauldron; to move too quickly, however, without first resolving key issues of verification and linkage, would be to indulge in an illusion of progress.

*Defense.* Total defense against biochemical weapons is as elusive as a totally verifiable ban. Even so, several steps can be taken to strengthen deterrence by creating uncertainty in the minds of potential aggressors about US capability to fend off a biochemical attack.

- Step one is to beef up intelligence efforts to determine the scope and degree of current and emerging biochemical threats. Resources currently funneled into this area are microscopic compared to those directed at fathoming nuclear threats. And yet, to the extent that nuclear forces have settled into a kind of floating gridlock, whereas the biochemical threat is gaining momentum, it seems prudent to begin shifting some intelligence assets.

The confusion surrounding the yellow rain controversy in Southeast Asia a few years ago illustrates how ill-prepared the United States was to sort out and substantiate allegations of biochemical warfare. Experts still argue about the source of yellow rain—whether people were stricken by natural toxins from bee waste or by a biological weapon in the hands of Soviet allies.

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Judging from recent reports, the American intelligence community scored a notable success in 1988 in tracing the commercial origins of Libya's new chemical plant. We should hope that the current attention paid to biochemical "economics" is a sign that extra care and resources are also going to be funneled into biochemical "diagnostics."

By definition, most covert operations depend on secrecy, or at least plausible deniability, to be useful. One way to reduce the threat of covert biological warfare is to increase the counter-threat that clandestine attacks will be exposed and traced to their origins. Two basic means are available to increase detection capabilities: better gathering of intelligence about adversaries' capabilities and intentions, and a well-nourished program to support biosensing research. The United States spends only a small fraction of its total military allotment for biochemical weapons on the biological side; more disturbing, of the money allocated for biological weapons, only a small percentage goes to advanced biosensing and diagnostic research.<sup>50</sup> This situation should be changed immediately. It is vital that opportunities for undetected and undetectable biological attacks be kept to a minimum.

• Step two, based on the intelligence yield, is to intensify biochemical research and development programs to explore all options for antidotes and protective vaccines, and also to maintain a plausible capability for fashioning a like-kind retaliatory response if needed. There is an urgent need to guard against biotechnological surprise. According to the authors of the 1988 report on *Discriminate Deterrence*, "the Soviets are sure to stay well ahead in their research on chemical and biological weapons, where they have practically no US competition."<sup>51</sup> This gloomy forecast may overstate the problem a bit, but it does suggest the magnitude of the gap between Soviet and US programs. In 1988 the United States spent more to buy a single F-14D fighter than on its entire biological weapons research and defense program.



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The patchwork approach is a combination of modest but mutually supporting improvements. The overarching goal is to slow down proliferation of biochemical agents and discourage their further use, while at the same time buttressing deterrence and defense. There is no single solution to the menace of biological and chemical weapons. Export controls, economic sanctions, and international conventions all play a role in limiting the threat, but the biochemical maze does not offer an easy exit, either nationally or internationally.

### **Aggressive Defense**

A more forceful approach might involve preemptive strikes to prevent biochemical attacks on the United States or its allies. The controversy surrounding Libya's chemical plant at Rabta highlights the pros and cons of such action.<sup>52</sup> Under international law, construction of a chemical weapons facility is not forbidden. The 1925 Geneva Convention only prohibits *use* of chemical weapons—not their manufacture or possession. Realistically, the United States worries that Qaddafi's track record of extremism makes his possession of chemical arms a threat per se.

The saber rattling of the last days of the Reagan administration, during which Washington raised the prospect of a military strike against the Rabta plant, appears to have had three objectives: to put Qaddafi on final notice, to seize the lead and perhaps dampen any Israeli enthusiasm for an independent strike, and to impress on our allies the urgent need for export controls and vigilance in slowing down biochemical proliferation. For now, the prevailing consensus within the US government seems to be that, in the absence of actual injury to our interests or at least hard intelligence that injury is imminently threatened, there is no clear legal justification for attacking the Libyan plant.<sup>53</sup>

One risk, of course, is that Qaddafi might opt to produce and stockpile large quantities of "pharmaceuticals"

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before distributing or employing them. Once such weapons are dispersed, a preemptive strike loses some of its value, especially if biological agents are involved. In fact, a preemptive strike on a bioweapons workshop, if it broke open secure containment facilities without exterminating the pathogens inside, could precipitate rather than prevent a catastrophe.

By its very nature, military preemption is a weapon with many limitations. Unless a nation cares little about its international reputation, preemptive attacks are usually reserved for situations posing clear, immediate, substantial danger. The Libyan plant at Rabta symbolizes the confusion and cross-currents that exacerbate the biochemical problem: capable of producing both medicine and military weapons, legal according to international norms but perceived to be a grave threat, built with Western connivance in pursuit of short-term profits at the risk of down-range perils. Threats of a preemptive strike may help to keep Qaddafi in check, but preemption is obviously no solution to the larger issues posed by biochemical proliferation.

## **THE ORPHAN THREAT**

EVEN IF ALL THE STEPS recommended thus far come to pass, one more change would still be necessary. The US biochemical effort needs to become less an Army program and more of a national one. As the organization most likely to come face-to-face with a biological or chemical threat, the Army has had the lead for over 50 years. Now that the biochemical problem is snowballing, it is time for a multi-disciplinary, multi-agency effort.

In the recent judgment of the Army's own Science Board, "essentially little attention has been given by the Army in its biological defense programs as to how modern biotechnology might be used by potential adversaries."<sup>54</sup> This is a dangerous state of affairs, yet

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somewhat understandable. Biochemical agents do not have a natural constituency within the military. Service members are reluctant to become involved with "soft" weapons. The paradigm of a weapon seems to be a platform bristling with firepower—and tomorrow's version will be bigger, faster, and more powerful. Biochemical weapons are headed in the opposite direction: smaller, more overt, and increasingly repugnant. More to the point, the services themselves are leery of diverting resources from the weapon systems they prefer to the dismal world of biochemical agents—especially since the ramifications of this threat extend well beyond traditional service functions and forces.

Accordingly, the real force structure needed to cope with this expanding problem is an infrastructure incorporating elements from the Defense Department, the Federal Bureau of Investigation, the State Department, the National Institutes of Health, and the Center for Disease Control. Possible formats might be a presidential advisory council, a National Security Council interagency group, or a joint agency patterned after the Defense Nuclear Agency. Paralleling the doctrine of combined arms, a multi-disciplinary group of this sort would seek to get on top of the biochemical threat by force of combined brainpower.

### A GLIMPSE OF THE FUTURE

THE OUTLOOK FOR biological weapons is grimly interesting. Weaponeers have only just begun to explore the potential of the biotechnological revolution. It is sobering to realize that far more development lies ahead than behind.

The modern battlefield is already, by design, an exceedingly dangerous place for human beings. Today's smart weapons will become the brilliant weapons of tomorrow, and future generations of "genius" weaponry lie over a not-so-distant horizon. The characteristics of

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such weapons will include a fire-and-forget mode, extended loiter capability, micro-propulsion, and enough true artificial intelligence to allow them to hunt down individuals relentlessly. Neural networks equivalent to the brain capacity of a bumblebee are already on the drawing board. From a combination of a refined version of this capability with advanced robotics, tenth-generation electronics, and a shaped-charge or toxin "stinger," emerges the conceptual prototype of an "insect weapon" that could dominate the tactical battlefield of the next century. Today's remotely piloted vehicles could metamorphose into tomorrow's artificial killer bees.

So is the role of the human warrior ultimately threatened? As a bearer of weapons, perhaps; as a director of weapons, no.<sup>55</sup> A human in the loop will still be the key to battle no matter how lethal to living organisms a battlefield becomes. Despite predictable advances in robotics, artificial intelligence, and micro-miniaturization, a human being should long remain the most versatile, mobile computer system that can be mass-produced by unskilled labor.

Where does this leave bioweapons? Will they simply continue to be a wild card in the battlefield and force structure equations? The vision of an insect weapon described above arises from a view of the military future centered around *hardware*. Long before insect weapons become technically feasible, however, bioweapons may be able to achieve the same nasty results using gene-splicing and other techniques yet to be developed. Even at the tactical level, precisely engineered microbes could turn out to be a more formidable threat than precision-guided munitions.

Weaponizing the life sciences threatens to change a basic perspective on warfare. For centuries, the military's prime focus has been to marry up its warriors with appropriate weapons. Conceptually, modern warriors

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still fight like their medieval counterparts—albeit with rifles instead of arrows, with tanks instead of horses, with artillery and rockets instead of catapults. The regime of soft weapons—bugs and drugs—weakens this bond and threatens to end-run the modern focus on weapons that rely on the application of brute force. The battlefield of today is, in essence, a high-explosive environment. The battlefield of the future may well end up being a hellish mix of high explosives (small nuclear weapons and precision-guided munitions), low explosives (beam weapons and rail guns), and no explosives (biochemical agents).<sup>56</sup>

### WARS HOT AND COLD

SOFT WEAPONS also circumvent current military preparations in another fundamental way. An essential element of warfare is the ability to determine when one has been attacked. The use of a nuclear weapon, for example, is not likely to go unnoticed. Use of biological weapons might, indeed, not be noticed.

An ominous new possibility is that attacks could be mounted that mimic natural phenomena so well that the onslaught may not be recognizable for what it is. Potentially, biological agents can be converted into the ultimate stealth weapons. The dark side of biotechnology enhances the opportunities for a kind of shadow war with no formal battlefronts and no detectable invasion.

We can view a nation's military forces as antibodies created by society to protect against, and deal with, external threats. But what if this protective antibody fails to recognize an invader or pinpoint the source? Invisible attacks of this sort represent the highest level of maneuver warfare. According to Jeremy Rivkin, "microbes are the foot-soldiers of the 21st century."<sup>57</sup> More precisely, they threaten to become the elite saboteurs of the coming

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century. To the degree that hot wars grow increasingly impractical, the surreptitious and protean nature of soft weapons will unfortunately encourage their use as an extension of war by other means.<sup>58</sup>

THE BIOTECH REVOLUTION has opened up dangerous new possibilities for converting the basic processes of life into weaponry. Still in its infancy, this revolution is likely to be a source of continuing surprises. From the standpoint of national security, the United States must track these developments closely to minimize the chance of a decisive trump card turning up in enemy hands. To paraphrase Mao's well-known maxim, future military power may come from the mouth of a test-tube as well as grow out of the barrel of a gun.

Thus far, the national investment in biological defensive research has been a pittance compared to the expenditures made for traditional military systems. As discussed earlier, the deeper threat of biological agents lies not in their formal use on a battlefield but, rather, in their potential to become extraordinary weapons of stealth. Compared to the murky world of biological threats, nuclear weapons present an aura of refreshing clarity. Both types of weaponry pose grave dangers to US security. Unfortunately, America's military ethos—centered on engineering, hardware, and firepower—makes it difficult for Americans to grasp the true strategic significance of soft weapons. Ironically, while the United States contemplates spending a sizable part of its national treasure on the Strategic Defense Initiative, comparatively few resources are being channeled to close a serious defensive gap now opening up along the biological frontier.

The current international wrestling match over chemical weapons is only a preliminary to the far harder

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bout to come. A revolution in biology is liberating the life sciences—and also unleashing the potential for bio-weapons capable of nearly infinite refinement. Decisions made—or ducked—now about how to cope with the military implications of biotechnology will cast a long shadow into the future. At present, the problem is comparatively small but it could easily grow beyond control by the end of the twentieth century. Although the United States has begun to pay more attention to military biology during the past few years, the overall US stance still suggests a continuing inclination to whistle past the graveyard. If Americans fail to get on top of the biological weapons threat, some day this metaphor could take on a new and macabre meaning.

#### NOTES

1. See Manfred Hamm, "Deterrence, Chemical Warfare, and Arms Control," *Orbis*, Spring 1985, p. 157.
2. Joseph Douglass, Jr., "The Challenges of Biochemical Warfare," *Global Affairs*, Winter 1988, p. 156.
3. Charles Piller and Keith Yamamoto, *Gene Wars* (New York: William Morrow, 1988), p. 113.
4. In 1987, the Soviets alleged that AIDS was created by an American BW experiment gone haywire. Although no evidence has been offered to support this charge, some studies conclude that it would be possible to manipulate genes to interfere with the body's immune system. See Piller and Yamamoto, p. 97.
5. Douglas Feith, "Biological Weapons & the Limits of Arms Control," *The National Interest*, Winter 1986/87, p. 81. Feith served as deputy assistant secretary of defense for negotiations policy from March 1984 to September 1986.
6. Michael Gordon, "Libya Says It Can Make Chemical Arms If Others Do," *New York Times*, 10 January 1989, p. A12. Libya is reported to have a joint biological warfare program underway with Romania. See Joseph Douglass, Jr., "Soviets Surge in Biochemical Warfare; West Remains Drugged with Apathy," *Armed Forces International*, August 1988, p. 58.

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7. John Fialka, "Chemical Weapons Spread in Third World, Pose Challenge to West," *Wall Street Journal*, 15 September 1988, p. 1; Lee Lescaze, "Quest for Way to Block Biological Weapons Is Itself Called a Threat," *Wall Street Journal*, 19 September 1988, p. 1; Elisa Harris, "CBW Arms Control: A Regime Under Attack?" *Arms Control Today*, September 1986, p. 9. The following nations are reported to be either members of the chemical club or on the verge: United States, Soviet Union, France, Iraq, Iran, Egypt, Syria, Israel, Libya, North Korea, South Korea, Taiwan, China, South Africa, Romania, Czechoslovakia, Indonesia, Vietnam and Ethiopia. No nation admits to stockpiling biological weapons. Countries believed to have the capacity for developing a bioweapon on short notice include the United States, Soviet Union, Iraq, Iran, Egypt, Israel, Syria, China and Romania.

8. Modern weapons and munitions are enormously costly, and very few countries have the resources to spend large sums developing and stockpiling arms. The more expensive war stays, the fewer the nations which can pose a conventional threat. Unfortunately, B/C weapons threaten a lot of destruction at relatively little cost. In the judgment of Robert Gates, new Deputy Advisor of the National Security Council, "the most immediate threat to world peace may well come from the proliferation of chemical and biological warfare in the Third World." David Ottaway, "Middle East Weapons Proliferate," *Washington Post*, 19 December 1988, p. A11.

9. Fred Ikle, Albert Wohlstetter, editors, *Discriminate Deterrence: Report of the Commission on Integrated Long-Term Strategy* (Washington: US Govt Print. Off., 1988), p. 10.

10. John Cushman, "U.S. Cites Increase in Biological Arms," *New York Times*, 4 May 1988, p. A9.

11. A breakthrough in biology described as "the most significant technological event since the Industrial Revolution" (Douglass, *America The Vulnerable*, *infra* note 22, p. 3) will be difficult to ignore, either militarily or commercially. The genie of genetic engineering cannot be stuffed back into its bottle for two basic reasons. First, the logic of deterrence and counter-deterrence suggests that in a fearful world nations will tend to explore and, where practical, exploit new technology for military purposes—if only to forestall an adversary from gaining an advantage. Second, the commercial utility of genetic engineering continues to expand. As global oil supplies dwindle, the economics of production will gradually encourage chemical and pharmaceutical industries to use biotechnological methods in key production processes. As a result, even without overt military pressure, a vast reservoir of gene-cloning expertise will build up. This commercial momentum means that "in the not-too-distant future, countries throughout the world will learn how to produce an enormous variety



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of large biological molecules, including toxins, on a scale that was previously inconceivable." Jonathan Tucker, "Gene Wars," *Foreign Policy*, Winter 1984-85, p. 63.

12. Ottaway, "Middle East Weapons Proliferate," p. A4.

13. George Moffett III, "Israel: Determined Not to be a Chemical Target," *Christian Science Monitor*, 13 December 1988, p. B15.

14. Ottaway, "Middle East Weapons Proliferate," p. A4.

15. "Israeli Satellite Is 'Threat' Say Arabs," *Jane's Defense Weekly*, 1 October 1988, p. 753.

16. Fialka, "Chemical Weapons Spread in Third World," p. 1, citing an unidentified "U.S. government expert."

17. Dr. Robert Kupperman, quoted in William Rempel and Robin Wright, "How Spying, Analysis and Luck Provided Proof of Libyan Chemical Warfare Plant," *The Providence Sunday Journal*, 22 January 1989, p. A-8.

18. However, even if chemical weapons are just a harbinger of greater troubles to come, at present the main threat to Middle East stability appears to be chemical. With Israel holding an estimated 50-100 nuclear weapons and Arab adversaries beginning to amass a significant number of deliverable chemical and perhaps biological warheads, the region is entering a hair-trigger environment. In essence, the Middle East is undergoing a shift from Israel's assured military superiority to a regime of reciprocal deterrence loosely equivalent to the US-Soviet notion of mutual assured destruction (MAD). Understandably, Israel views this turn of events with alarm and is currently mulling over whether to invest in an offensive or defensive strategy to deal with the new Arab threat. The Middle East may simply be too volatile to permit transition to, much less maintenance of, a stable MAD equilibrium. Prime Minister Shamir and Defense Minister Rabin have already dropped strong hints that major chemical attacks against Israel would be met with a nuclear rather than chemical or conventional reply. (See Leonard Spector, "Nonproliferation After the Bomb Has Spread," *Arms Control Today*, December 1988, p. 10.) The proliferation of missiles and B/C weapons increases the chance of miscalculation by either side—and resurrects the possibility that Israel might take desperate retaliatory measures, such as using shaped nuclear charges to contaminate or even obliterate key oil fields upon which the wealth, and ultimately the military might, of the Arab bloc depends.

19. Feith, "Biological Weapons & the Limits of Arms Control," p. 82. See also Richard Wohl "Biological Warfare: Advances Breed New Dangers," *Defense Science 2002+*, p. 51. Another indicator of Soviet interest in B/C technology is that in recent years 70 percent of all Soviet requests for research papers made to American universities,

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research establishments and libraries have been on subjects involving chemical and biological engineering. See John Hemsley, *The Soviet Biochemical Threat to NATO* (New York: St. Martin's Press, 1987), pp. 126-27.

20. The Soviets place a high priority on targeting an adversary's command and control apparatus. Although many of NATO's key C<sup>3</sup> sites have been hardened to offer some protection against conventional and even nuclear blasts, they remain relatively vulnerable to attack by B/C agents. As John Hemsley notes, "the problems associated with air-conditioning, limited capacities of closed-circuit systems, and staff shifts . . . [are] likely to become more acute with the introduction of 'novel' agents during the next decade." Hemsley, *The Soviet Biochemical Threat to NATO*, pp. 128-29. Hemsley is particularly concerned that the Soviets seem to be on the threshold of developing a new series of "penetrant and discipline breaker" agents which, in his judgment, will make "all hardened and static headquarters' sites especially vulnerable to CBW." *Ibid.*, p. 143.

21. This deficiency will begin to be remedied in 1990 when a new US binary chemical bomb, the Bigeye, becomes available.

22. Joseph Douglass, Jr. and Neil Livingstone, *America The Vulnerable* (Massachusetts: Lexington Books, 1987), p. 101.

23. Hemsley, *The Soviet Biochemical Threat to NATO*, p. 49.

24. Lescaze, "Quest for Way to Block Biological Weapons."

25. Gary Thatcher, "Disease as an Agent of War," *Christian Science Monitor*, 15 December 1988, p. B10. It is also plausible, of course, that Falin's statement—far from being an unguarded comment—was a deliberate attempt to plant an idea intended to discourage SDI. Since then, there appear to have been no further open-source Soviet statements linking SDI and biotechnology. As John Hemsley points out, however, for reasons of economy "it could well prove that the Soviet Union sees biotechnologically derived 'designer' agents as the logical response to SDI." Hemsley, *The Soviet Biochemical Threat to NATO*, p. 48.

26. US Dept of State, *Chemical Warfare in Southeast Asia and Afghanistan*, Special Report no. 98, March 1982; US Dept of State, *Chemical Warfare in Southeast Asia and Afghanistan: An Update*, Special Report no. 104, November 1982. The Government case was based on multiple information sources: testimony of victims and defectors, epidemiological data, analysis of medical samples, physical samples from attack sites, and intelligence data.

27. For criticism of the reliability of the Government's evidence on yellow rain, see J. Robinson, "chemical and Biological Warfare: Developments in 1983," in SIPRI, *World Armaments and Disarmament*, *SIPRI Yearbook 1983* (London: Taylor & Francis, 1984), pp. 336-38;

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S. Salaff, "Yellow Rain: Time for Re-evaluation," *Journal of Contemporary Asia*, vol. 14, no. 3 (1984), pp. 380-95; and E. Guyot, "Yellow Rain: The Case Is Not Proved," *The Nation*, 10 November 1984, pp. 465-84. For alternative theories which explain yellow rain as a natural phenomenon, see M. Meselson, "The Search for Yellow Rain," *Arms Control Today*, September 1986, pp. 31-36; and L. Ember, "Yellow Rain," *Chemical and Engineering News*, 9 January 1984, p. 11.

28. S. Schwartzstein, "Statement," US Congress, Senate, Committee on Foreign Relations, Subcommittee on Arms Control, Oceans, International Operations and Environment, *Yellow Rain: The Arms Control Implications*, Hearing (Washington: US Govt Print. Off., 1983), p. 109.

29. Douglass, "The Challenges of Biochemical Warfare," p. 159. See also US Dept of State, *Chemical Warfare in Southeast Asia and Afghanistan*, Special Report no. 98, March 1982.

30. Hemsley, *The Soviet Biochemical Threat to NATO*, p. 63; see also p. 23, n. 17, in which Hemsley cites N.V. Ogarkov, *Istoriya uchit bditelnosti* (Moscow: Voenizdat, 1985) for the proposition that the Soviets consider "modern forms of CBW ... a quantum leap forward in the method of waging war."

31. Piller and Yamamoto, *Gene Wars*, pp. 113-14.

32. Douglass, "The Challenges of Biochemical Warfare," p. 160. See also Wohl, "Biological Warfare."

33. Piller and Yamamoto, *Gene Wars*, p. 98, citing Raymond Zilinskas, "Managing the International Consequences of Recombinant DNA Research," Ph.D. dissertation, Los Angeles: University of Southern California, 1981.

34. Piller and Yamamoto, *Gene Wars*, p. 129, quoting David Kingsbury when he was director of the Naval Biosciences Laboratory in Oakland, California in 1984.

35. US Congress, Senate, Committee on Armed Services, *Chemical Warfare Review Commission*, Staff Report (Washington: US Govt Print. Off., 1985), p. 118.

36. Douglass and Livingstone, *America the Vulnerable*, p. 74. The Soviets are also reported to be working on quick-acting diseases, with an incubation period of a few hours, that could serve a tactical function. See Douglass, "Soviets Surge in Biochemical Warfare," p. 58; and Douglass and Livingstone, *America The Vulnerable*, p. 77.

37. Piller and Yamamoto, *Gene Wars*, p. 72.

38. Another possible source of a B/C threat inside American borders might be terrorism. Although terrorists have targeted American citizens and interests throughout the world, thus far relatively little activity has been reported within the United States. In addition, up to this time nearly all terrorists groups have relied on conventional weaponry to carry out their attacks. Many experts believe terrorists

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have not yet turned to B/C weapons because potential drawbacks continue to outweigh expected benefits. (See Elliot Hurwitz, "Terrorists and Chemical/Biological Weapons," *Naval War College Review*, May-June 1982, pp. 36-40; L. Paul Bremer III, "High Technology Terrorism," *Dept. of State Bulletin*, July 1988, pp. 65-67.) The likely gains from a B/C attack resulting in mass casualties would be spectacular visibility and perhaps short-term bargaining power; the probable disadvantages would include deep public revulsion, a high risk of alienating key support groups, and an unleashing of extremely vigorous countermeasures. As Dr. Robert Kupperman, terrorism expert at the Center for Strategic and International Studies in Washington points out, government pursuit of bioterrorists would probably be relentless: "If terrorists start to use [biologicals], there is no end to which a nation would go to stop them." (Jeanne McDermott, *The Killing Winds* (New York: Arbor House, 1987), pp. 254-55.) To some degree, terrorism is theater—a kind of psychodrama played out on the world stage with real victims to gain public attention for desperate causes. As Brian Jenkins sees it, "terrorists want a lot of people watching and a lot of people listening, not a lot of people dead." (Augustus Norton, "Terrorists, Atoms and the Future," *Naval War College Review*, May-June 1979, p. 42.) Of course, this logic holds only so long as the death of a few continues to be newsworthy. Some observers worry that after a decade of being exposed to terrorism based on conventional explosives, people are becoming "desensitized." (See Harvey McGeorge, "Reversing the Trend on Terror," *Defense & Foreign Affairs*, April 1988, p. 16.) Accordingly, as existing techniques begin to lose their propaganda punch, the temptation for terrorists to turn to more exotic and deadly means will grow. For this school of thought, the question is not whether B/C weapons will be used by terrorists, but only, *when*. Whatever their stance on the psychodynamics of terrorism, analysts generally agree on at least one point: the means to construct chemical or biological weapons are now within the grasp of many nonstate groups and, as time passes, the killing potential of these means will only expand. As previously discussed, many experts rely on a benefit-burden analysis to support their conclusion that terrorists are unlikely to resort to B/C agents. Unavoidably, such an argument pivots around the notion of a "rational" terrorist. There may be some freedom fighters who are not so calculating—those who, in a spasm of retribution, might seek to destroy what they cannot realistically hope to control. A terrorist group determined to inflict mass casualties (rather than just engage in theatrics) could well turn to B/C agents. The capability exists already.

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39. John Tower, "The Politics of Chemical Deterrence," *Washington Quarterly*, Spring 1982, p. 36. See also Manfred Hamm, *supra* note 1, pp. 127-28. In Hamm's judgment,

NATO has long relied in practice on the threat of nuclear escalation to deter Moscow from initiating chemical combat. But a nuclear response has always lacked credibility. . . . It can be all but ruled out that NATO's political leaders would muster the courage to permit the use of nuclear weapons to retaliate against chemical attacks or to transfer this decision to their military commanders in order to make the nuclear response automatic.

40. Quoted in Jonathan Tucker, "Gene Wars," *Foreign Policy*, Winter 1984-85, p. 76.

41. Piller and Yamamoto, *Gene Wars*, p. 175, quoting Richard Novick, director of the New York Public Health Research Institute.

42. Feith, "Biological Weapons & the Limits of Arms Control," p. 83. Feith's conclusions have been widely shared by government and private analysts. In 1986, H. Allen Holmes, an assistant secretary of state for politico-military affairs, opined that "the Convention, in our judgment, cannot be made effective through amendment or design." (H. Allen Holmes, *Science*, 10 October 1986, p. 143.) In 1985 the Defense Science Board on Chemical Warfare and Biological Defense concluded that "technology has made obsolete much of the distinctions and language of the BW treaty." (Dept of Defense, "Biological Defense Program," Report to the Committee on Appropriations, House of Representatives, May 1986, chap. 1, p. 6.) For the past five years, in numerous articles and books, Joseph Douglass, Jr., has been arguing that the BW Convention is a dangerous illusion lulling the United States to sleep. See, e.g., the Douglass sources cited in notes 2, 6, & 22, and Joseph Douglass, Jr., and H. Richard Lukens, "The Expanding Arena of Chemical-Biological Warfare," *Strategic Review*, Fall 1984, pp. 71-80. For a contrary view, that the BW Convention is not hopelessly obsolescent and could perhaps be salvaged, see Piller and Yamamoto, *Gene Wars*.

43. Feith, "Biological Weapons & the Limits of Arms Control," pp. 83-84.

44. Michael Gordon, "Senators Prepare Sanctions Laws For Supply and Use of Poison Gas," *New York Times*, 24 January 1989, p. A8.

45. John Kester, "Chemical Weapons, Cloudy Thinking," *New York Times*, 13 January 1989, p. A31.

46. Russell Watson, "The Winds of Death," *Newsweek*, 16 January 1989, p. 25. Other leading experts echo Burns' point. "It would be extremely difficult to detect a deliberate violation of a chemical warfare

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treaty—extremely difficult,” observed Thomas Welch, deputy assistant to the secretary of defense for atomic energy and chemical matters. (Cited in Dan Boyle, “an End to Chemical Weapons—What Are the Chances?” *International Defense Review*, September 1988, p. 1087.) Brad Roberts, a CW expert at the Center for Strategic and International Studies in Washington, is quoted as concluding: “A realist would have to say that the prospects for a meaningful chemical disarmament regime are dim.” (Russell Watson, “Letting a Genie Out of a Bottle,” *Newsweek*, 19 September 1988, p. 31.)

47. Charles Flowerree, “Elimination of Chemical Weapons: Is Agreement In Sight?”, *Arms Control Today*, April 1988, p. 9.

48. James Markham, “Arabs Link Curbs on Gas and A-Arms,” *New York Times*, 9 January 1989, p. A8.

49. Watson, “The Winds of Death.” Judging from pledges made during the election campaign, President Bush is keenly interested in keeping up the momentum for a CW treaty. “If I’m elected president,” he said, “if I’m remembered for anything, it would be this: a complete and total ban on chemical weapons. Their destruction, forever. That is my solemn mission.” Paul Taylor, “Bush: Ban Chemical Weapons,” *Washington Post*, 22 October 1988, p. 7.

50. Dept of the Army, Committee on Chemical and Biological Sensor Technologies, *Assessment of Chemical and Biological Sensor Technologies*, June 1984, p. 50.

51. Ikle and Wohlstetter, *Discriminate Deterrence*, p. 9.

52. See Robert Tucker, “Using Force Against Libya,” *New York Times*, 11 January 1989, p. A23.

53. David Ottaway, “U.S. Officials See Insufficient Grounds to Justify Attacking Libyan Plant Now,” *Washington Post*, 8 January 1989, p. A24.

54. Tony Capaccio, “New Exotic Germs on the Way,” *Defense Week*, 16 May 1988, p. 15.

55. See, generally, Steven Shaker and Alan Wise, *War Without Men—Robots on the Future Battlefield* (Oxford: Pergamon-Brassey’s, 1988). According to the authors,

the opportunities for weapon superiority afforded by [new] technologies, as well as the increasingly dangerous battlefield environment, may eventually relegate man to the role of behind-the-scenes strategist, leaving machines to perform the actual fighting. If current trends continue, it is not a question of whether this will happen, but rather how long it will take [p. 6].

They estimate that fully autonomous robots will be deployed on the battlefield within 20–30 years and comprise the “pre-eminent” force

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within 50-60 years. *Ibid.*, pp. 10 & 73. Ironically, the expanding threat of biochem weapons will likely spur on the development of such robotic systems.

56. Of course, not all of society's important battles take place on a battleground in the formal sense. The continuum in which soft weapons can be used reaches beyond battlefields and the military's traditional capabilities for defense. To cite a current example, one of the most damaging weapon systems presently being directed at the United States is chemical warfare in the guise of narcotics. According to some analysts, the growing trade in drugs involves more than just an unbridled quest for profits. In their judgment, the drug lords are being assisted for political reasons by terrorists and certain governments hostile to the United States. Illicit drugs are not only a source of easy wealth but also a potent and expanding means to sap the vitality of American society. As explained by a high-ranking Nicaraguan defector, who claimed to have first-hand knowledge of Cuban and Sandinista strategy,

Yankee imperialism [is] armed to the teeth, believing that the Soviet Union [is] going to attack the U.S. as part of a nuclear war. But the Yankees [do] not realize that the Yankee imperialism [is] going to perish, eaten from within by ... the drug traffic and the economic competition with Japan and the European Economic Community....

(Testimony of Alvaro Aviles before the Senate Subcommittee on Security and Terrorism, quoted in Rachel Ehrenfeld, "Narco-Terrorism and the Cuban Connection," *Strategic Review*, Summer 1988, p. 60.) Communist competition with the West is grounded on a belief in the inexorable and favorable march of history. Accordingly, patience becomes an essential element of the all-assets struggle. Nudge and chip and nibble away, but stop short of provoking a cataclysmic showdown. Given that frame of reference, why should adversaries engage in formal war if, at relatively little cost, they can stimulate efforts to eviscerate our society from within? Several authors note that, historically, both the Soviet Union and the People's Republic of China have not been reluctant to use drugs as a weapon. (See Douglass, *America the Vulnerable*, pp. 119-26; and Alvin Buckelew, "The Secret World of Narcoterrorism," *Security Management*, September 1987, pp. 69-73.) In his article, Buckelew, a former senior US intelligence officer who served in East Asia and Latin America, traces narcotics "warfare" against the West over a 40-year period. Phase 1 began in 1949 when Mao Tse-tung directed a flow of narcotics to US occupation troops in Japan and later to American forces in Korea. Phase 2 started in the

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early 1960s when, impressed by Chinese success in using what Mao referred to as "indigenous chemical warfare," the Soviets decided to mount a similar—but much broader—campaign against the West. In late 1962, following the rebuff of the Cuban Missile Crisis, Nikita Khrushchev set into motion a large-scale operation to infiltrate narcotics into major Western nations. His declared intent was "to accelerate the process of demoralization of bourgeois society" by weakening American youth (Douglass, p. 121). Also targeted, as an extension of the overall strategy, were members of the armed forces. The cheap and plentiful supply of drugs available to servicemembers in Vietnam and Europe during the late 1960s and 1970s was no accident. As described by Buckelew,

in the late 1960s, the major drug [supplied by China to American troops in Vietnam] was exceptionally potent marijuana dipped in opium to create addiction. Later, nearly pure heroin arrived in the vicinity of US bases in Vietnam, at or below cost (eighty cents a gram), while the supply of marijuana and other drugs dried up. The objective was clearly to stimulate heroin use by American troops [p. 71].

During the last decade, the US military has made substantial progress in bringing its internal drug problem under control. The growing travail of American society as a whole, however, suggests that at least one prong of the original Sino-Soviet drug initiative continues to thrive as a self-sustaining weapon that pays for itself. And there may yet be worse to come. Douglass reports that the Soviet bloc has developed at least a half dozen new "recreational" drugs which are deemed, on the basis of tests on prisoners, to be even more addictive and debilitating than cocaine. For now, the Soviets have decided not to "market" these new drugs but instead to hold them in reserve for the right opportunity (Douglass, p. 55).

57. Quoted in Gary Thatcher, "Disease as an Agent of War," *Christian Science Monitor*, 15 December 1988, p. B3.

58. Since 1945, nations possessing nuclear weapons have been careful not to engage in direct wars with each other. Most of the fighting has been done via proxies. But now that some of the proxy states are also beginning to acquire weapons of mass destruction, this technique might eventually become too risky as well. Twenty years from now, if current proliferation trends hold up, the world could easily have 50 nations with significant nuclear, chemical, or biological capabilities. In such an environment, as weapons of mass destruction continue to disperse throughout the globe, hot wars will be a tricky business; and even the euphemistically named low-intensity conflicts may become



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carefully modulated duels with more political than military content. To follow this speculative path one step further, *if* the world becomes increasingly locked up militarily, then economic competition will be ascendant, and "warfare" might shift from overt to more covert forms. What could eventually emerge as a darker side to this economic struggle is an intensified campaign of "dirty tricks"—a stream of soft weapons designed to sap an adversary's vitality: computer viruses, designer drugs, insect pests and, tapping the new potential of BW, an array of enfeebling agricultural, animal and human disorders. To the extent possible, this cool war would be waged out of the public eye and off the military mapboard. During the past 45 years, it is likely that the first salvos in such a clandestine campaign have already been launched—silently and without fanfare. The concept of social sabotage is not new. What is disturbingly new, however, is the growing potential for biological and toxin agents to serve as weapons in such a struggle.

## 2

# US AIRLINES AND DEFENSE AIRLIFT

THOMAS J. STEPHENSON

AN OLD PIECE OF AIR FORCE HISTORY, WELL KNOWN BY THE time of the Korean War, needs to be revived and retold today. It needs to be retold because it seems to have been forgotten, and because its lesson promises huge dividends for a nation more and more dependent on airlift to implement its national security strategy. The story starts near the very beginning of aviation in the United States and shows how civilian and government goals were mutually supportive. It suggests that the United States today must capitalize on similar mutual support to achieve national objectives.

Civil-military airlift is a timely subject. In June 1987, President Reagan published a long-needed National Airlift Policy directing military leaders to work together with the civilian airlines to create an effective airlift system. Consequently, the Senate Appropriations Committee Report on the Fiscal Year 1989 Department of Defense Appropriation Bill required the Department of Defense to recommend specific legislation to accomplish the president's goals. On 18 February 1989, the secretary of the Air Force submitted the proposed legislation. Reports from the Pentagon indicated the proposal was well received in Congress.

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Lieutenant Colonel Thomas J. Stephenson, US Air Force, wrote this essay while studying at the Air War College. The essay won recognition in the 1989 JCS Strategy Essay Competition.

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In my view, proposed legislation may not be sufficient to meet the president's challenge, and my goal is to recommend ways to better take advantage of the historical partnership to meet the challenges of future contingencies. By the end of this essay, I hope to have done the following:

1. Provided a historical context for civilian-governmental cooperation in airlift.
2. Convinced the reader that an active program is necessary to ensure that the partnership is ready for wartime tasks.
3. Identified two new ideas for enhanced cooperation between government and airlines.
4. Analyzed the options by organizing them according to their strong and weak points.
5. Provided a method for evaluating these and other options for enhancing civil airline fleets to meet emergency wartime airlift needs.

As I studied options for increasing defense airlift capability through partnership with commercial airlines, I became excited about some of the possibilities. I am encouraged because the Air Force is moving forward again in the historical direction of partnership. More important, new ideas promise truly outstanding benefits. They *can* be carried out and I am convinced they *should* be. They are inexpensive. They should make our airlines more competitive worldwide. Most important, they take advantage of trends already evident in the airline business.

A real window of opportunity exists. Airlines are healthier than they have been since before deregulation of the industry in 1978. *The Washington Post* reported in March 1989 that even the industry's most optimistic estimates were too low:

Boeing has increased its forecast for the number of commercial jets to be sold worldwide during the next 16 years.

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The company raised its forecast by 22 percent for the period. . . . The bulk of the orders is expected to come from growth in the airline industry. The company is forecasting airline traffic to double by 2005. If the Boeing forecast is accurate it means the world's aircraft manufacturers can expect to split some \$420 billion in orders. Airlines would be expanding their fleets by more than 50 percent, putting 11,800 airliners into the air compared to today's 7,200.<sup>1</sup>

The opportunity exists and I want to show how best to take advantage of that opportunity. The first task is to understand how the government has tied itself logically and historically to the airline industry—a procedure that has provided numerous benefits from both the industrial and the governmental perspectives.

### THE IMPERATIVE FOR CIVIL-MILITARY PARTNERSHIP

THIS ESSAY IS BASED ON the premise that military aircraft and the commercial airlines share the responsibility for airlift during a national defense emergency. If this premise holds, those charged with planning wartime airlift have to be concerned not only with the health of the US airline industry but also with its composition. When the country goes to war, will it do so with the mix of military aircraft and civilian aircraft needed for victory?

Military planners preparing for World War II concluded that the nation's airlines should be considered *national assets*. The Federal Aviation Act of 1938, therefore, provided for "an air transportation system properly adapted to the present and future needs of the foreign and domestic commerce of the United States, of the Postal Service, and of the National Defense."<sup>2</sup> This policy was not new but, rather, a formal statement of the policy

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toward commercial airlines that had successfully positioned the United States as the leader in world aviation.

### **The Early Years—Mail Contracts**

Direct government involvement in aviation had begun in 1916 with contracts for airmail service.<sup>3</sup> Many consider the early mail contracts to have provided the one essential element in the creation of a robust airline system in America. The Post Office "remained until 1934 the one government agency significantly involved in domestic and international operation."<sup>4</sup>

Inevitably, the airlines fought over the lucrative airmail contracts. In 1934, amid allegations of "collusion between the mail carriers and the Post Office," the conflict came to a head.<sup>5</sup> In a well-known, perhaps infamous chapter of Air Force history, President Roosevelt canceled all airmail contracts with commercial airlines and gave the Army Air Corps the airmail job. Ill-prepared for the task through lack of training and equipment, and hindered by exceptionally bad weather, the military pilots failed.

The task was given back to the commercial carriers, providing the first clear example of the imperative nature of the civil-military partnership. Briefly stated, there are tasks for which the military system is best suited, and there are tasks at which the commercial sector excels. These strengths are not competitive, but complementary. Both military airlift and commercial airlift are national assets. To have an effective national airlift system, President Roosevelt found, to his chagrin, he needed both. That logic remains today, and the national responsibility to nurture both systems has not diminished.

By 1938, airline growth had

changed the underlying character of U.S. airlines, transforming them from a collection of ramshackle contract mail-haulers into genuine common carriers. Inevitably,

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the transformation brought with it a host of problems, not the least of which was the lack of a Federal statute that recognized the carriers' new status.<sup>6</sup>

The Civil Aeronautics Administration, part of which was the Civil Aeronautics Board (CAB), was charged with setting fares, granting routes, setting safety standards, allowing new airlines to operate (granting certification), and in general *regulating* the airline system, promising "to promote [the airlines'] orderly growth with a minimum of competition."<sup>7</sup>

In summary, those early days of the air transport system were unsettled, with many lessons learned, forgotten, and then relearned. The most important lesson may have concerned the government's inextricable ties to this "special" industry:

The first twenty years of the airline industry included a progression from direct governmental promotion and operation, to haphazard expansion and uncontrolled corporate warfare, to abrupt disavowal of executive branch responsibility and, finally, to regulation by an ostensibly independent agency.<sup>8</sup>

### **Preparing for Wartime Partnership**

In the years before World War II, the government found itself tied ever more closely to the air industry. The nation needed Pan Am (the only US airline flying international routes before the war). Although the airline had no official status as a "chosen instrument" like European airlines (which in 1934 still had three-fourths of their costs subsidized by government funds,<sup>9</sup> Pan Am was still used by the US government to achieve national objectives. In 1939, for instance, Pan Am was given government money to expand its South American operations to compete with the Nazi-supported Colombian airline, Scadta.<sup>10</sup>

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Later, when the Allies needed a system to transport aircraft from the United States to Britain, Pan Am did the job, delivering 464 airplanes by the end of 1942. On the other side of the world, the airlift between China and India was also assigned initially to a Pan Am subsidiary, which carried 75 percent of the first month's cargo.<sup>11</sup> As the war effort increased, all the major US airlines contributed, but their initial use met with mistrust, marking a real love-hate relationship that continues to characterize the nation's relationship with its airlines today.

### **Melding the Two Systems for War**

During World War II, airlift operators worked so closely together that it was difficult to distinguish military from civilian. The Air Transport Command was run by a combination of military and civilian officers. Its second-in-command was the president of American Airlines, C. R. Smith, who was given the rank of major general.<sup>12</sup> The Air Corps took some aircraft directly from the airlines. On 15 May 1942, the Army requisitioned almost half the civil aircraft, leaving the carriers only 176 planes, compared to 354 six months earlier.<sup>13</sup> The remaining civil aircraft, though, still produced large profits for the airlines during the war,<sup>14</sup> symbolic of a symbiosis between military emergency and airline health.

After the war, US airlines found long-range airlift aircraft, trained pilots, and airfields available, routes established, and demand for international passenger movement high. The United States emerged from the war years with a substantial airlift potential, which US airlines moved quickly to realize. "In the long run, the war greatly accelerated the growth of peacetime civil aviation."<sup>15</sup>

### **The Uneasy Postwar Period**

US leaders also emerged from the war with the assumption that in future wars the airlift system would again be

"nationalized" to the mutual benefit of commercial business and national defense. In neither the Berlin airlift nor the Korean War, though, did the nation have to combine and nationalize the civil and military systems. Two reasons explain why these events did not require a repeat of the World War II experience. First, by the postwar period, the United States had active international fleets in the civilian inventory, representing an airplane surplus never again to be seen in the industry. Second, the airlines were *willing* to provide the support desired, to avoid the potentially disastrous results of nationalization.

The mid-1950s brought a change. The airlines, in an era of increased competition, kept viewing the airlift of military equipment as a vital source of funds. Two recent wars and the Berlin airlift had provided impetus for the industry, but where was that impetus during peacetime? The airlines' desire for military business led to congressional scrutiny of the system and restrictions on how much peacetime military airlift business the commercial airlines should be given.

In 1957, Congress mandated that 20 percent of all military cargo and 40 percent of all military passenger business must be given to commercial carriers.<sup>16</sup> In 1958 and again in 1959, a portion of defense appropriations were earmarked solely for procuring civil airlift for routine military cargo and passengers.

#### **Birth of the Civil Reserve Air Fleet**

At the same time, a solution to the wartime traffic problem was being institutionalized. It was CRAF, the Civil Reserve Air Fleet, since 1952 symbolic of a new civil-military partnership. CRAF, based on a series of inter-agency agreements and contracts, has provided a viable and profitable substitute for nationalization.

CRAF has evolved into a rather complex system involving three graduated call-up stages and four segments (or missions). Airlines that sign contracts to



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participate in CRAF are rewarded with peacetime government airlift business. By the end of 1988, the CRAF inventory included 276 passenger aircraft and 99 cargo aircraft, representing a potential of 158 million passenger-miles and 13 million ton-miles per day.<sup>17</sup>

#### **Recent Changes in the Partnership**

Since formation of CRAF, five major factors have produced changes in the civil-government partnership: Airlines were deregulated, a CRAF enhancement effort was undertaken, US package carriers have grown considerably, airline business has expanded in the Pacific region, and the president issued his National Airlift Policy.

*Airline deregulation, 1978.* The Pan Am monopoly on international airlift was broken after World War II, but the Civil Aeronautics Board still acted as approval authority for granting both routes and fares. In 1978 the system changed, and the CAB was put on a schedule to discontinue its operations. Deregulation has led to many changes in the civil airline industry. At first an overabundance of new operators scrambled to compete for lucrative routes. That has changed. "Deregulation brought with it a host of new airlines, but the pressures of operating in the competitive environment have winnowed the number of operators. The U.S. industry [in 1988] comprises 78 airlines operating as scheduled air carriers. This compares with 36 certificated airlines before the 1978 deregulation." In 1988 eight major carriers controlled 93 percent of the US market.<sup>18</sup>

*CRAF enhancement.* The idea of CRAF enhancement arose because of the need to create cargo, rather than passenger, capability in the civil fleet. Defense planners saw that CRAF could move soldiers to the battle more rapidly than it could move the soldiers' equipment. Thus

more cargo capacity was needed. CRAF enhancement called for the modification of passenger aircraft to make them rapidly convertible to cargo configuration during war.

So far, the government has contracted with four airlines to modify 23 airplanes—DC-10-10s, DC-10-30s, and B-747s—at a total cost of \$56.8 million. These will represent 3.3 million ton-miles per day capability by the year 1990.<sup>19</sup>

The Air Staff points out that to purchase this amount of airlift would cost the government many times the amount paid for CRAF enhancement. For instance, the DC-10-30 would cost the government approximately \$92 million to own and operate for its projected service life.<sup>20</sup> The \$4.3 million modification cost makes the enhancement a huge bargain.

*Growth of the package carriers.* Overnight delivery is an idea that has caught on in America. Federal Express, Emory Air Freight, United Parcel Service, and the US Postal Service are all in the business of rapid delivery of small packages. The demand is so great that the airplanes purchased to move these packages show new promise for wartime airlift. *Aviation Week and Space Technology* magazine reports on this situation, "Express carriers, which seized 47% of the U.S. market in 1987, are expected to continue outpacing the growth of the scheduled airline cargo operations."<sup>21</sup>

"These are the new freight airlines of the world," says Jay Woodworth of Bankers Trust Company.<sup>22</sup> Unfortunately, they are not good targets for traditional CRAF business—mainly because these companies do not need military business. Additionally, military requirements for a carrier enrolled in CRAF do not fit the package carrier situation. For instance, the package carriers have a lower crew ratio than the required four-crews-per-airplane. Even worse for defense, their air freighters are often not

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compatible with standard military loads (the 463L system). Still, the Military Airlift Command (MAC) is working very hard to capitalize on the capacity represented by the package carriers. MAC "stands to lose out on 5.66 million ton-miles per day of additional cargo carrying capacity by the year 2000 unless it can accommodate these types of operators in the program."<sup>23</sup>

There are ways, though, to capture the new freight capabilities of the package carriers for national use during war. And doing so is especially important considering the recent \$880 million acquisition of Flying Tigers Line by Federal Express Corporation. Flying Tigers operates some of the most important cargo aircraft in CRAF. "Flying Tigers perennially is awarded the largest amount of CRAF business, more than \$100 million from the commitment of 16 Boeing 747 cargo aircraft."<sup>24</sup> The United States must not lose this capability as the Flying Tiger assets are moved into the Federal Express system.

*Growing Pacific market.* The emphasis of the airlines is shifting west. Pacific traffic is the most rapidly expanding in the business, and is expected to grow 8-10 percent through at least 1995.<sup>25</sup> This trend carries definite military implications. On the favorable side, distances in the Pacific require airlines to operate the long-range, wide-bodied airplanes preferred by military planners. On the negative side, because range is so critical, few airlines are eager to absorb higher fuel costs that result from the extra weight the military wants airliners to have in order to be convertible to cargo. Jay Woodworth is a leading analyst of the airline industry, particularly the Asian market. In a letter to me, he wrote,

You must be alarmed by the hardware orders. According to my (quick) check, the only 747s the U.S. airlines have on order are 747-400s, and no one would "currently" give *any* thought to any modification that would reduce the

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range of those planes. The airlines have transpacific and intra-Pacific routes that require the 400s. The loss of only a few hundred miles in range would mean that some routes could not be served. Given the prevailing per-seat mile revenues in the Pacific, this is big bucks for the airline!<sup>26</sup>

*National Airlift Policy.* A National Airlift Policy of the United States was published for the first time on 24 June 1987. It replaced the "Presidentially approved Courses of Action" that had directed the civil-military airlift partnership since 1960. The new presidential document identifies the national airlines as critical for defense of the nation and charges the Department of Defense with ensuring that the civil fleet will meet defense needs. The document establishes clear guidance for the government in its development of defense features in the nation's civil aircraft fleets.

### **The First CRAF Enhancement Program, 1979**

In 1979 Congress recognized the need for a plan to tailor the US commercial air fleet to meet defense needs. The resulting legislation providing for modification of new wide-bodied passenger aircraft as they were being built. The modifications would make the aircraft convertible to a cargo configuration during a national emergency. Only one carrier, United, with only one airplane, a DC-10-10, ever participated in this first CRAF enhancement program.

The government paid for the extra costs of putting in the features for cargo—mainly a strengthened floor and a cargo door. The government also paid for revenue lost because of the extra production time. Finally, the government paid the airline for a fuel penalty fee because the extra weight of the aircraft would increase fuel consumption and costs. The one-time cost to the government was \$15.8 million, and the guaranteed life of that airplane in the CRAF fleet was sixteen years.

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No other airline, though, offered any other new aircraft, and the United DC-10-10 stands as the single example of a system that had a large potential for affecting the wartime airlift equation. Why didn't the system work? For one thing, airlines were not buying many aircraft in the early 1980s, as this was a slump period. They were also afraid that the extra weight of the modification would make a modified aircraft difficult to sell. Finally, they were worried about the restrictions in the system, especially those that precluded the airline from using any of the new cargo system, or selling the aircraft to someone who wanted to use the cargo features for peacetime commercial operations. Since the CRAF enhancement program failed to generate new aircraft for modification, military planners began examining the cost-effectiveness of modifying older passenger airliners to include cargo-convertible features.

#### **CRAF Enhancement Two: Retrofit**

The result was the Pan American Airlines contract, which was to eventually place a total of nineteen modified Boeing 747-100s and -200s into the US civil inventory (now eighteen, because the fatal Pan Am flight 103 was one of the modified aircraft). Modifying existing aircraft is more expensive than modification during production. Existing aircraft have to be taken out of service, and the government pays for the very expensive down time as well as the expensive modification and weight penalty costs. At \$30 million each, though, the taxpayers again got a lot of airlift for their money. As in the first enhancement program, the owner is forbidden to use the cargo features or he forfeits a penalty.

#### **CRAF Enhancement Three: The 50 Percent Rule**

The first two chapters of the CRAF enhancement story clearly demonstrated the potential increases in airlift if smart managers worked hard at maximizing airlift for the

dollar. So in 1986 those smart managers worked with Congress and produced a further refinement to the program. The modifications discussed above were to *passenger* aircraft, and in fact the operators of those aircraft were *prohibited* from using the cargo features the government had financed. The reasoning was that if the carrier was going to buy a cargo airplane anyway, the government shouldn't be responsible for its cargo modification costs. This logic was understandably frustrating to the cargo carriers, who said, "Hey, Uncle Sam, when you go to war it is *my* airplanes (cargo aircraft) you really want to use first. They are cargo configured and ready to go. Why are you paying passenger carriers to fly convertible airplanes and doing nothing for us who are already flying the planes you want?"

The cargo carriers were right, and in 1986 Congress passed public law 97-86, which restated congressional support for the CRAF enhancement program and allowed a new category of participant—the carrier who wanted to modify a passenger aircraft and operate it in the cargo-converted configuration. Congress recognized that the government should not pay for all the cargo features of any such aircraft; but to encourage the operator to purchase cargo capability, the government would pay 50 percent of just the modification cost. Because the carrier was not reimbursed for a weight penalty as in earlier programs, the modifications cost the government much less.

In my opinion, the 50 percent rule is the biggest step forward in logic since the inception of the CRAF program. For the first time, the government is acknowledging that it has a role in *encouraging* air carriers to operate the airplanes it wants as national airlift assets. The government is not just using public funds to buy capabilities of little interest to the carrier; it is paying to help a carrier who will operate the exact airframe it wants available, in the exact manner it wants. The only thing more attractive

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to the military would be if the program produced pure-cargo aircraft rather than convertible aircraft.

The Federal Express purchase of a DC-10-30 was the first application of the new 50 percent rule. For \$4.3 million, the government ensured that one of the most desirable wide-bodied aircraft was placed in the US inventory. My discussions with Federal Express officials indicate they were considering at least two other DC-10-30 aircraft, but were unable to convince the government that they needed government assistance under public law 97-86.

Government officials are very careful about using the 50 percent rule. If a carrier will buy the airplane anyway, public funds should not be committed. Federal Express officials would point out, though, that there would be two other DC-10-30 cargo aircraft available if the government had participated. Instead, the company bought Boeing 727 cargo aircraft that are less useful to US wartime planners.

A more recent participant in the 50 per cent rule is Evergreen Airline, which is contracting to modify existing Boeing 747s under the rule.

### **New Legislation**

In 1989 the Department of Defense recommended to Congress a change in public law 97-86 to provide for inclusion of defense-necessary secure communications, range enhancements, and identification friend or foe (IFF) units on selected long-range CRAF aircraft. DOD estimates that \$2 million will allow the government to provide these critical features for up to 40 aircraft a year.<sup>27</sup> It also proposes that DOD be granted

flexibility to be able to work toward the modification of civil aircraft to incorporate cargo-convertible or cargo-capable features to increase the long-range cargo capability of the CRAF. This would be done by DOD

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participation in the building of new aircraft, or the modification of existing aircraft to *any* of the cargo-capable configurations—freighter, convertible, or combi.<sup>28</sup>

Members of Congress have given favorable reviews to the program. It was clear in the appropriations bill language that they encourage an expanded CRAF. The disadvantage of all the CRAF enhancement programs is that they cost the taxpayers money. (In this paper I propose alternatives that do *not* cost public money.)

Where has CRAF enhancement brought us? The numbers are impressive. "When current contracts are completed in November of 1989, the DOD will have modified 23 aircraft. These 23 aircraft will contribute 3.4 million ton-miles per day of the 16.2 MTM/D of cargo capability being provided by the CRAF."<sup>29</sup> That is almost 21 percent of the whole CRAF contribution, or almost 7 percent of the combined civil and military wartime air cargo capability.

## WHERE TO GO NOW

FOLLOWING ARE THE TWO new ideas I promised at the beginning of this essay. I propose them as the next chapter of the successful civil-military partnership story.

### **CRAF-Based Landing Fees**

Although the subject of landing fees is not one usually studied in relation to military airlift, my investigation has revealed real possibilities. In fact, after some months of research, I have found *no major barriers* to the idea of adjusting landing fees in US airports based on the military mobility value of the airplane rather than based on gross weight.<sup>30</sup> I have talked with officers in the Federal Aviation Administration (FAA), the Department of Transportation (DOT), and the American Association of



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Airport Executives (AAAE). None of these officials was as negative on the idea as I had expected, and the more research I have done, the more feasible the idea appears. Here are what I consider to be the pertinent facts:

- US airports generally are governed by local airport authorities or "boards." They, and only they, determine landing fees. However, the US government provides strict rules on the method of determining the landing fees. Basically, fees can be based on those direct costs to the airport incurred in the operation of landing the airplane. For instance, an airport can charge more for night landings if it costs more to run the airport at night. It can charge more for noisy airplanes since they are a burden on the community. It can charge more for heavier aircraft, because they create more wear and tear on the facilities. But airports may not otherwise discriminate in an attempt to tailor their group of airport users.

The recent case of Massachusetts Port Authority (Massport) illustrates the principle. Boston's Logan Airport began charging landing fees disproportionately higher for small private planes, under a plan called PACE (Program for Airport Capacity Efficiency).<sup>31</sup> The airport authorities did not hide the fact that the airport was becoming too congested and that private airplanes were no longer welcome. The Department of Transportation ruled on the case clearly in favor of the small private plane. The port authority had violated national policy, especially the Airport and Airways Improvement Act of 1982, by discriminating against small aircraft.<sup>32</sup> The decision indicated that Massport had gone "beyond a fair and reasonable action to effect the legitimate recovery of costs, and clearly cross[ed] over into an area which is inconsistent with Massport's federal grant assurances to keep the airport open and available for public use to all classes of aeronautical users on fair and reasonable terms."<sup>33</sup>

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- Landing fees in the United States are much lower than in most of the rest of the world. An officer of the American Association of Airport Executives estimated the average landing fee for a jumbo jet in the United States to be about \$400. In Japan, Germany, or Great Britain, he estimated, the fee would be nearer \$2,000, five times the fee in the United States.<sup>34</sup>

- Other nations sometimes charge more for foreign flights than they charge their own national airline flying the same equipment. The United States has resisted this procedure, which it views as clearly in violation of the General Agreements on Tariffs and Trade (GATT).

- US airports are by law non-profit. They may use their landing fees to build better facilities, but they may not be profit-making enterprises. They borrow from and contribute to the Aviation Trust Fund, administered by the Federal Aviation Administration for major improvements.

- The Aviation Trust Fund has a very large surplus, estimated at \$6 billion, and there is pressure to reduce taxes on passenger tickets and aviation fuel to reduce the surplus.<sup>35</sup>

- The general industry standard is to charge landing fees based on aircraft weight.

My conclusion is that the above points encourage the proposal to charge differentiated landing fees at US airports *according to how much each airplane contributes to defense airlift*. Since the federal government sets the landing fee rules, changing the rules to favor airplanes most desirable for wartime airlift seems possible.

I propose increasing all landing fees at international airports in the United States to approximately twice what they are now. In 1986, the top 23 US airports had 8,537,800 airplane movements.<sup>36</sup> If each movement equated to an average of \$100 in new fees, a potential fund of \$853.78 million would be available. Credit would

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be given for some portion of those fees for each airplane, based on its value to defense airlift. The remaining funds could provide for a much more effective CRAF enhancement program. The goal is not to punish those carriers who do not operate the equipment we want, but to reward those who do.

Commercial carriers have been incensed for some time over the unfair treatment of US flag carriers in the world airlift system. In 1981, officials of nine major airlines sent a letter to the secretaries of transportation and state, and the White House counsel, saying, "the discriminatory and anticompetitive practices being followed by some foreign countries and foreign carriers need to be addressed on a priority basis and corrected to the extent feasible."<sup>37</sup> They recommended that an energetic study address CRAF problems. The need is still there, and I submit that the landing fees concept, although not listed in the original letter, would be applauded as a long-overdue move to correct imbalances in the costs of airline operation throughout the world.

In any event, the concept is a simple one. A federal committee, probably located within the Military Airlift Command, would determine yearly which airplanes are most useful for national defense, based on that year's industry make-up and current military capabilities. For the foreseeable future, long-range, wide-bodied *cargo* aircraft would receive the most points. Since each airplane is different, the grading would have to be done by individual tail number. A federal landing fee for each aircraft would then be added to the local landing fee for each aircraft. Heavier aircraft should still be expected to pay more, but a heavy cargo airplane would be charged less than a passenger airplane of the same weight and type.

This proposal has the huge advantage of producing readiness funds. It also has the advantage of rewarding

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US carriers who participate in the CRAF program in ways their profit-centered boards of directors understand. There will be criticisms, however, and I must address them.

*Objection one: Passenger airlines would bear the brunt of the program.* This is true. And almost uniformly, when I present the idea to someone in the airline business (even cargo carriers), they advise that the airline lobby will kill the idea. The traveling public will not be advocates either, because the cost of a ticket would go up. Plus, it would gall the passenger hauler to see the cargo hauler paying less for the same type and weight plane.

These arguments, though valid, do not outweigh the advantages. If landing fees were increased by \$500 dollars per jumbo jet, that is in the \$2 per passenger range. I believe that is too small an increase in ticket price to be considered significant by the average traveler. Besides, the passenger operator can lower the landing fees for his planes by signing CRAF contracts for them, or by allowing them to be modified in the CRAF enhancement program.

*Objection two: The proposal discriminates against foreign carriers.* Bilateral treaties negotiated by the State Department for aviation have been notoriously one-sided in favor of the foreign carrier. This condition was necessary initially because of post-World War II fears of US allies that Americans would monopolize international air travel.<sup>38</sup> Now, when US carriers fly overseas they pay at least twice the US landing fees on the average, and their access to through-flight destinations (fifth freedom rights) are very much restricted. Some nations blatantly violate international trade conventions by granting lower fees for operation of their own flag carriers.

It is time to adjust this long-time bargain for foreign carriers operating in the United States. The foreign

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carriers are growing faster than their American counterparts. "The loss of U.S. market share has been a concern of U.S. airlines for several years. The international passenger market share of U.S. flag airlines has shifted from a high of 50.7% in 1983 to a low of 47.1% in 1986."<sup>39</sup> Furthermore, the nation's airplanes that have been committed to CRAF should logically be given a "readiness subsidy" when operating out of US airfields.

It would also be possible to give a landing-fee reduction to those foreign-owned aircraft committed to the NATO Allied Pre-committed Civil Aircraft Program (NAPCAP), which is the NATO equivalent of CRAF. A similar break could be given those Korean aircraft committed to the civil air augmentation program for the reinforcement of Korea. These measures would somewhat soften foreign objections.

Differential landing fees hit the real decisionmaking center of gravity for airline companies—profit. The airlines understand the nation's goals and respect the military's desire for cost-effective airlift. The landing fees concept represents a real possibility, not only because it influences purchases of airplanes but also because it is self-supporting.

When viewed in the perspective of potential benefits, the advantages far outweigh the objections. Given this program's potential advantages, the government and the military should start to work on overcoming the problems as soon as possible.

#### **Joint Use and Base Access**

In December 1988, the chairman of Federal Express, Fred Smith, proposed that the government grant his company permission for regular landings at El Toro Naval Air Station in California. His was just the latest of many proposals for military fields to be used for commercial operations. The military almost always consider that

such an arrangement would be a one-way street to the advantage of only the commercial carrier.

I believe that view is an inaccurate one. Facilities built by a cargo airline, for instance, might prove to be a huge wartime advantage. Revenues taken in by the government as a result of allowing civilians to use the airport landing facilities might be converted to better facilities for ali. And there are other advantages. The point is that the military operates out of some prime locations, the use of which would be extremely attractive to a commercial operator, and we might realize defense profits by letting commercial carriers use the fields.

The situation is given impetus by the growing, intense pressure on the nation's airports because of traffic growth. "FAA forecasts indicate that airports will be expected to handle about 700 million enplanements in 1997, compared to about 400 million in 1985—with virtually the same number of airports," reports *Aviation Week*.<sup>40</sup> The pressure on US airports is enormous, when "weekly aircraft departures have grown 64% since deregulation. The FAA considers 13 large airports congested today and anticipates that an additional 34 airports will be congested by 2000."<sup>41</sup>

Can the military take advantage of the situation and mold a more efficient commercial-military airlift system? More important, *can the overcrowded airport situation help in tailoring the US air fleet to include military cargo features?* I am convinced the answer is yes. Interest is growing. In January of 1988, the FAA was reported to be studying

options that include the takeover of military airports near high-population areas. Such facilities already are operational, capable of handling all-weather aircraft operations and usually have ample room for the construction of commercial passenger terminals. In return, the government would build state-of-the-art military air bases in less populated regions. Also a possibility is opening certain military

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runways to airline aircraft in the Civil Reserve Air Fleet (CRAF), providing a needed boost for that Defense Dept. program.<sup>42</sup>

My proposal is to negotiate with carriers for their use of military fields when military missions will not be unreasonably hurt—and when the local communities approve it and will benefit from it. Such a case is Scott Air Force Base, near St. Louis. It has access to a rail system, an interstate highway system, and a major city, it is located near the middle of the country, and it has the space to accommodate a freight operation without hurting the military mission. The current “joint-use” plan for Scott Air Force Base calls for a large increase in the size of the base to include at least one more runway. If the plan goes through, cargo carriers will have a central US hub that could be extremely productive. On the other hand, and little advertised, the military will have a greatly expanded facility that, during war, can handle much more cargo than the old Scott Air Force Base. More important, granting the civilians access to Scott Air Force Base based on their importance to the CRAF program would provide a new pressure for an airline fleet that better meets wartime needs.

One problem with the joint-use concept is the need for lengthy negotiations with surrounding communities, to include environmental impact studies. Another problem is administration of the program, especially establishing procedures to transfer funds to the federal coffers. I suggest using the new “CRAF Enhancement Trust Fund” generated by the landing fee suggestion above. If not that trust fund, the expanded Aviation Trust Fund could be effective if carefully managed. The money must be used for an invigorated CRAF enhancement program. A third problem, one requiring careful study, is the breach in base security represented by a civilian operation on an Air Force base. Security is an especially important

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consideration in an era of increasing terrorist threat, and may make some military fields unacceptable for joint use.

In spite of these problems, the proposal has enormous promise. The nation gains both by having the new facilities at a military base, to be used for military cargoes if required in a national emergency, and by having additional leverage for motivating carriers to operate the equipment the military wants.

WHEN ALL IS SAID AND DONE, certain "truths" remain about the airlift systems—civilian and military—in the United States:

- Even during periods in which the government attempts to become uninvolved or to deregulate the airline industry, a requirement for governmental action remains. Otherwise, the airlines languish.

- Military airlift aircraft are specialized to a military mission and are essential to defense plans. However, the amounts to be airlifted during war require the use both of military assets and of the nation's airlines.

- Stronger airlines increase the potential for passenger airlift during war, but cargo capability has historically lagged behind this passenger capability. Since the nation has more passenger capability than cargo capability, there are continuous plans to convert airlift from passenger to cargo.

- Airlift is a national resource. Some of this resource is in the civil sector and some of it is represented by organic military aircraft. The nation must plan on the efficient use of *both* sectors.

- CRAF enhancement is important. First, it has produced substantial increases in national air cargo capability. More important, it shows that great economies for defense can be realized through a cooperative effort



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with US commercial airlines. It has already produced 3.4 million ton-miles per day cargo capability that would not otherwise exist. The concept must be expanded within its logical bounds.

- CRAF enhancement is a successful program, and one whose principles are well accepted, mainly because they make good economic sense and good military sense. It has captured the imagination of defense planners and members of Congress. As we get continually smarter on CRAF enhancement, we see new opportunities to do even greater things using its principles.

- There always will be a need for a purely military airlift system. It is needed for less-than-war emergencies. It is needed for military-unique cargoes. It is needed to get into many airfields that lack ground support equipment required by the commercial airliners. And it is needed to deliver material close to the battle and into short runways. Military airlift will always form the backbone of the overall national airlift system. President Reagan made this clear in his 1987 National Airlift Policy:

The goal of the United States Government is to maintain in peacetime organic military airlift resources, manned, equipped, trained and operated to ensure the capability to meet approved requirements for military airlift in wartime, contingencies, and emergencies.

- To maximize wartime airlift requires taking advantage of airline potentials—including a potential for converting excess passenger capability to cargo capability, and for encouraging the existence of the kinds of cargo airplanes most helpful to meeting wartime airlift challenges.

The two new ways suggested here to take advantage of present and historical facts may represent the next chapter in the airlift partnership. If pursued, they promise an immediate gain in national mobility. The

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failures of defense enhancement ideas are most often the result of cost tradeoffs. Too many good ideas are competing for increasingly limited funding. The programs recommended in this essay have the unusual advantage of being self-sufficient, suggesting that they can be and should be pursued immediately.

I do not underestimate the difficulties of carrying out these proposals, but I must underscore the potential payoffs of a much-expanded Civil Reserve Air Fleet. A 1987 study by the transportation consulting firm Harbridge House predicted that over 1,000 new wide-bodied aircraft would be placed in the airlines' inventories by 2004. Even though many of those aircraft have been ordered without regard to defense needs, the remainder represent an unprecedented opportunity to manage the civil airline fleet.<sup>43</sup>

In this essay I have outlined actions to take advantage of a historical impetus toward airlift partnership. The plan promises large payoffs. It does not require excessive funding, but it does require vision—and it does require action.

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### 3

## PERMANENT NEUTRALITY AND THE PANAMA CANAL AFTER 1999

ROBERT J. SANDERS JR

THIS ESSAY EXAMINES THE STRATEGIC IMPLICATIONS FOR THE United States of the Treaty Concerning the Permanent Neutrality and Operation of the Panama Canal after 1999. In it, I review neutrality—a general concept of international law—as applied to the Panama Canal, examine the Neutrality Treaty of 1977, and consider likely threats to the canal and possible US responses. The essay concludes with recommendations for policymakers should the canal's permanent neutrality and operation be challenged.

In 1977 President Carter and Panama's General Omar Torrijos signed two new treaties that promised to begin a new era in US-Panamanian relations. The two treaties, the Panama Canal Treaty<sup>1</sup> and the Treaty Concerning the Permanent Neutrality and Operation of the Panama Canal,<sup>2</sup> were signed by the two leaders on 7 September 1977 and ratified by the US Senate six months later. The congressional and public debate over treaty ratification pitted conservatives, who saw the treaties as a betrayal of US interests and a giveaway to an unstable military dictatorship in Panama, against moderates and liberals, who looked to the treaties as the

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Commander Robert J. Sanders Jr, US Navy, wrote this essay while studying at the Army War College. The essay won recognition in the 1989 JCS Strategy Essay Competition.

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best way to guarantee future good relations between the two countries and uninterrupted use of the canal. By a slim two-thirds majority vote (68 to 32), the US Senate consented to ratification, subject to various amendments, conditions, reservations, and understandings. The ratifications were exchanged 16 June 1978 in Panama, and the two treaties entered into force 1 October 1979.

#### **The Panama Canal Treaties of 1977**

The Panama Canal Treaty abrogated all previous treaties and agreements between the United States and the Republic of Panama concerning the Panama Canal and the Panama Canal Zone. The new treaty provided a transitional period for the gradual transfer to Panama of responsibility for canal operation. During this period, the United States retains primary responsibility for defending the canal. The Panama Canal Treaty terminates at noon on 31 December 1999. Thereafter, according to the Neutrality Treaty, "only the Republic of Panama shall ... maintain military forces ... within its national territory."<sup>3</sup>

The Neutrality Treaty established a regime of permanent neutrality for the canal that is to be maintained by both the United States and Panama. The treaty stipulated the principles of neutrality to be followed, and gave the United States the right of expeditious transit and unilateral defense of the canal.

#### **The Issues**

Until the end of 1999, the United States has primary responsibility for defending the canal and has the right to maintain military forces in Panama. Although certain to incite adverse public opinion, unilateral US action to maintain or restore the canal's permanent neutrality and operation, should it become necessary during that period, would be clearly supportable based on US rights under both treaties.

Not as clear is the situation after 1999 if unilateral US action to maintain canal operation and neutrality might involve the use of military force, to include the reintroduction of ground forces. Notwithstanding US treaty rights, the uninvited reintroduction of US forces into Panamanian territory, even with the most altruistic of intentions, is fraught with difficulties. Under what circumstances should the United States consider the use of military force to maintain the treaty? At what point does unilateral US action to maintain permanent neutrality actually destroy the canal's regime of neutrality? It is possible that unilateral US action to maintain the canal's operation might invite increased violence that would result in the closing of the canal. The United States would have to weigh the risk of damaging long-term interests in the hemisphere by exercising the right to unilaterally intervene.

#### **Assumptions**

Some underlying assumptions about the near term are necessary in order to narrow the range of variables. The following assumptions are based on either trends or stated policy.

1. There will be no new treaty arrangement with Panama to provide for the stationing of US forces in Panama beyond 1999.
2. The United States will withdraw its forces from Panama not later than 31 December 1999, as required by the 1977 treaties. All provisions of the Panama Canal Treaty will be honored and executed, and the treaty will terminate as scheduled.
3. The economic value of the canal will remain fairly constant. Although the canal is still "an important utility to the United States and world trade . . . its existence is by no means vital or critical in the long term."<sup>4</sup> The canal will continue to play a much larger role in the economies of developing nations. Countries in Central America and

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on the west coast of South America depend heavily on the canal.<sup>5</sup>

4. The canal's military value to the United States will not change. Unimpeded use of the canal enhances military mobility and flexibility but cannot be guaranteed in general war. The canal's vulnerability to modern weapons makes it prudent to assume that it would be closed by hostile action in a global war.

5. Democratic institutions in Panama will remain weak and subject to manipulation by the military. US foreign policy, the war on drugs, and US economic and social influences will prove adequate substitutes for the withdrawn US military force to sustain anti-American sentiment in Panama after 1999.

#### PERMANENT NEUTRALITY

PERMANENT NEUTRALITY—or more properly, neutralization—has a long tradition in international law and has long been a factor in the foreign relations of nations. *Neutralization* can be defined as “a special international status designed to restrict the intrusion of specified state actions in a specified area.”<sup>6</sup> Although the terms *neutrality* and *neutral* refer to the non-belligerent posture of a state, or the special protection afforded certain establishments or organizations, in time of war, *neutralization* refers to the status of a state or geographic area whose independence, integrity, and security are guaranteed by international agreement for all time.<sup>7</sup> A state or area that is neutralized is permanently neutral. Neither term should be confused with *demilitarization*, since a state can be permanently neutral without giving up its armed forces. Another similar term with an entirely different meaning is *neutralism*, which refers to a state's nonaligned status with respect to the superpowers.

Permanent neutrality is established by international agreement and imposes reciprocal obligations,



guarantees, and responsibilities on the contracting parties. The motivations for such an agreement usually lie in the parties' own self-interest in enhancing the international order, in supporting political or territorial integrity, or in improving military security and moderating defense costs. Once negotiated and ratified, any neutrality agreement's weak link is the effectiveness, in the face of political realities, of the formal commitments provided for in the treaty. Since *neutralization* is likely to represent only a compromise agreement between the contracting parties, unilateral actions to maintain neutrality inevitably raise questions of partiality and "tend to destroy a neutralization arrangement under the guise of enforcing it."<sup>8</sup>

### **The Panama Canal**

A review of the history of the Panama Canal in terms of neutralization provides not only the background for examining the 1977 treaty but also gives a frame of reference for considering US-Panamanian relations.

*The Beginning.* The California gold rush of the 1840s created the economic incentive for development of a modern transportation system across the Isthmus of Panama. Great Britain, the world's greatest sea power at the time, was also interested in the commercial prospects of a new trade route to the Pacific, and had already entered into an agreement with Colombia to guarantee transit across the isthmus. The mutual interests of the United States and Great Britain led to the Clayton-Bulwer Convention, signed 19 April 1850. This agreement established the neutral character of any future ship canal that might be constructed between the Atlantic and Pacific Oceans. The United States and Great Britain declared that neither would seek exclusive control over any such canal, and neither would fortify or occupy any part of Central America. In case of war between the two parties, they agreed not to blockade, detain, or capture each other's ships within the canal. They further agreed

that after such a canal was completed, they would "protect it from interruption, seizure, or unjust confiscation, and . . . guarantee the neutrality thereof, so that the said Canal may forever be open and free." The treaty concluded by establishing a "general principle . . . that the same Canals, or railways, being open to the citizens and subjects of the United States and Great Britain on equal terms, shall, also, be open on like terms to the citizens and subjects of every other State which is willing to grant thereto, such protection as the United States and Great Britain engage to afford." Besides articulating the precept of neutrality for an isthmian canal, the Clayton-Bulwer treaty also established the precedent of inviting other states to accede to the principles and objectives of the treaty.<sup>9</sup>

While an American company completed construction of an isthmian railway between Colon and Panama City, a Frenchman pursued his dream of building a canal through the Isthmus of Suez. Under Ferdinand de Lesseps, who would later fail in Panama, the Suez Maritime Canal Company completed a canal across Suez and opened it to traffic in 1869. But not until nearly 20 years later was an international agreement on the neutral character of the Suez Canal reached. The agreement, the 1888 Convention of Constantinople, provided regulations and enforcement provisions deemed necessary to keep the canal always "free and open, in time of war as in time of peace, to every vessel of commerce or of war, without distinction of flag." Other provisions delineated the terms under which belligerent warships could use the canal. The convention preserved Egypt's sovereign rights and charged Egypt with the responsibility of ensuring the protection of the canal, under the supervision of an international commission.<sup>10</sup>

The rise of American naval power and acquisition of oversea territories incident to the Spanish-American War enabled the United States to fill the vacuum in Central America created by the Royal Navy's withdrawal from the Western Hemisphere and the failure of de Lessep's French

Panama Canal Company in 1893. This transition was recognized in the Hay-Pauncefote Treaty of 1901. The United States and Great Britain agreed that the 1850 Clayton-Bulwer Treaty was superseded "without impairing the 'general principle' of neutralization established in Article VIII of that Convention," and that a canal could be constructed by the United States alone. The United States, granted the exclusive right of regulating and managing the canal, adopted "as the basis of the neutralization of such ship-canal, the following Rules, substantially as embodied in the Convention of Constantinople. . . . The Canal shall be free and open to the vessels of commerce and of war of all nations observing the Rules, on terms of equal equality . . . the Canal shall never be blockaded, nor shall any right of war be exercised nor any act of hostility be committed within it. The United States, however, shall be at liberty to maintain such military police along the canal as may be necessary to protect it against lawlessness and disorder." Additional rules restricted provisioning, troop movement, and length of stay within the canal and adjacent waters for belligerent naval ships.<sup>11</sup>

The political machinations of Philippe Bunau-Varilla, a former director and the chief stockholder of the defunct French Panama Canal Company, with the complicity if not encouragement of certain US officials, culminated in Panama's independence from Colombia and the Hay-Bunau Varilla Treaty of 1903. In return for the US guarantee of Panamanian independence, Panama granted to the United States "in perpetuity the use, occupation and control of a zone of land . . . for the construction, maintenance, operation, sanitation and protection of said Canal," and "all the rights, power and authority within the zone . . . which the United States would possess and exercise if it were the sovereign" (Article III). With respect to the international character of the canal, Article XVIII provided that "the Canal, when constructed, and the entrances thereto shall be neutral in perpetuity, and shall be opened upon the

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terms provided for by ... the treaty entered into by ... the United States and Great Britain on November 18, 1901."<sup>12</sup>

The Hay-Bunau Varilla Treaty set the pattern for US-Panamanian relations and fueled anti-American sentiment in Panama for the next 75 years. Panama tended to interpret the treaty as narrowly as possible, insisting that the United States was entitled to sovereign rights only to the extent essential for the canal's construction, maintenance, sanitation, and protection. The United States was inclined to interpret the treaty more broadly, and gradually came to identify canal defense with defense of the Western Hemisphere.<sup>13</sup>

*The challenge of war.* The opening of the Panama Canal to traffic in 1914 coincided with the outbreak of World War I in Europe, which gave a sense of urgency to questions concerning the canal's neutral status. As far as these questions are concerned, the situations in World Wars I and II are essentially identical. In both wars, the United States remained a neutral state for some time after the outbreak of hostilities in Europe. In each case, the United States met the anticipated challenges to the canal's neutrality and defenses through a series of executive orders, legislative acts, and Canal Zone regulations.

There was no question as to the US right to defend the canal so long as the United States remained a non-belligerent. The 1903 treaty had granted to the United States the right "at any time to employ armed forces for the safety or protection of the Canal."<sup>14</sup> The legal right of a neutral state to take military action to defend itself had long been recognized in international law. Accordingly, in addition to issuing the General Proclamation of Neutrality (4 August 1914), President Wilson ordered other proclamations that specifically addressed the canal. The secretary of war instructed the governor of the Canal Zone on 22 August 1914 to obtain written assurances from the commanding officers of ships belonging to belligerents that

they would adhere to all canal and harbor regulations before allowing them to transit.<sup>15</sup> The numerous rules and regulations specified in great detail which acts were prohibited or restricted in the Canal Zone for each of the various classes of ships. The neutrality proclamations, in addition to providing for more stringent control of the canal, were intended to prepare for even tighter control procedures should the United States enter the war.<sup>16</sup>

The US declaration of war on 6 April 1917 brought with it new problems as to the legitimacy of continued neutrality of the canal. Although the canal had been declared "neutral in perpetuity," was it now considered to be the territory of a belligerent?

The issue of a belligerent's right of defense and neutralization of the canal had first been raised in 1900 during Senate debate on the first draft of what later became the 1901 Hay-Pauncefote Treaty. Referring to a revised proposal in a letter to Secretary of State Hay on 2 October 1901, the American ambassador in London wrote that the canal could be "ours to build ... to own, control and govern—on the sole condition of its being always neutral ... except that if we get into a war with any nation we can shut their ships out and take care of ourselves."<sup>17</sup> The US interpretation of the neutrality provisions of the 1901 treaty is further revealed in a letter from Secretary Hay to Senator Cullom on 12 December 1901:

The obvious effect of these changes is to reserve to the US, when engaged in war, the right and power to protect the Canal from all damage and injury at the hands of the enemy, to exclude the ships of such enemy from the use of the Canal while the war lasts and to defend itself in the waters adjacent to the Canal the same way as in any other waters, without derogation in other respects of the principles of neutrality established by the treaty.<sup>18</sup>

Regardless of the legal issues involved, practical considerations for the defense of the canal immediately

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brought about more stringent control procedures. The commanding general in the Canal Zone was directed by an Executive Order issued 9 April 1917 to assume exclusive authority and to exercise exclusive control over the Panama Canal and Canal Zone.<sup>19</sup> A proclamation issued 23 May 1917 implemented additional regulations prohibiting enemy vessels from entering the Canal Zone without the consent of canal authorities. Additionally, the US Navy established defensive sea areas seaward of the canal's entrances and prohibited traffic in these areas during hours of darkness. All previous neutrality rules applicable to ships belonging to belligerents were amended to exclude US ships. The proclamation made no distinction, however, between hostile belligerents and allied friendly belligerents.<sup>20</sup>

The United States' refusal to distinguish between friendly and enemy vessels with respect to wartime neutrality measures strengthened the canal's neutral standing in international law, even if it did inconvenience allies. The United States carefully weighed the practical need for adequate defense measures to protect the canal against the legal decisions rendered by the State Department about protecting the canal's neutral character. Thus the United States seized six German merchant vessels lying in the Canal Zone when war was declared, as an exercise of a sovereign right to confiscate enemy vessels within its jurisdiction—and by the 1903 treaty with Panama, though the United States was not the territorial sovereign, the Canal Zone was most definitely under its jurisdiction. On the other hand, the US State Department rejected Great Britain's request for unlimited use of Canal Zone repair facilities by the Royal Navy's Pacific Squadron, because the ships could not be certified as being in actual distress, a condition required by US neutrality regulations.<sup>21</sup> That no one challenged or objected to the wartime regulations imposed by the United States for using the canal is evidence that the United States, within the constraints of legitimate security measures, upheld the principle of neutralization intended by the 1903 treaty.

In the years between the world wars, the United States became the "good neighbor" and espoused a policy of mutual respect and nonintervention in the hemisphere. Efforts to improve relations with Panama resulted in the General Treaty of Friendship and Cooperation (Hull-Altaro Treaty), signed 2 March 1936. The treaty did not abrogate the basic relationship embodied in the 1903 treaty, but it did restore some of the rights, dignity, and land that Panama had given up previously. The treaty also cancelled the US guarantee of Panama's independence and moderated the terms under which the United States could take action in defense of the canal. Article X of the treaty included provisions that would apply "In case of an international conflagration or the existence of any threat." In such a case, the treaty stated, "Any measures, in safeguarding such interests, which shall appear essential to one Government to take, and which may affect the territory under the jurisdiction of the other Government, will be the subject of consultation between the two Governments."<sup>22</sup> Not until Panama acknowledged that the United States "need not delay action to meet the emergency pending consultation" but should consult with Panama "as soon as it may be possible" did the US Senate consent to ratification.<sup>23</sup>

US preventive measures to protect the canal's operation and neutrality during World War II were similar to those taken earlier. On 5 September 1939, President Roosevelt issued two proclamations, one a general proclamation of neutrality, the other prescribing neutrality regulations in the Canal Zone. These were followed by a succession of ever more detailed regulations. Neutrality rules were rigidly but impartially enforced, and "no objection was raised by the US in the second World War during its own neutrality to the passage through the Panama Canal of belligerent armed merchantmen, or of belligerent or neutral vessels carrying contraband of war to the warring Powers."<sup>24</sup>

One exception to the United States' impartial enforcement of its neutrality procedures is recorded in the case of a

group of Japanese merchant vessels that entered Cristobal on 9 July 1941 for transit to the Pacific. The United States had coincidentally learned that Japan had recalled its ships for a "major military effort" and ordered those in Atlantic ports to be west of the Panama Canal by 1 August. The War Department instructed canal authorities that, because of urgent maintenance then in progress, canal traffic was to be limited, and that no Japanese vessel was to pass through until further notice. The Japanese, informed that there would be some delay, waited a few days, then steamed back out into the Atlantic. Afterward, Secretary of State Welles justified the US action on the basis of the Japanese aggression in the Pacific that threatened the supply of US raw materials, threatened the Philippines, and threatened US security worldwide.<sup>25</sup>

As war loomed nearer, US port authorities were directed to take possession of foreign vessels lying idle in American waters in order to prevent crews from sabotaging their ships or obstructing navigation. The order applied to ships in the Canal Zone. The largest ship to be seized was an Italian passenger ship, the *Conte Biancamano*, dockside in Cristobal.<sup>26</sup>

US-Panamanian relations were strained during the first two years of the war, a result in large measure of actions by Panama's President Arnulfo Arias, alleged to harbor pro-German sympathies. Late in 1940, the United States consulted with Panama to gain leasing rights to additional land sites in order to improve the air defense capability of the Canal Zone. Arias balked, demanding what the United States thought to be excessive compensation, and refused to negotiate in good faith. Increasingly frustrated with Arias' delaying tactics, one US foreign service officer recommended that in the "face of a real emergency, 'practical considerations should prevail over theoretical ones,' implying that the US should take over the bases arbitrarily."<sup>27</sup> Arias finally acceded to the US request in March 1941; a formal agreement was not actually signed until October.



The defense of the Panama Canal continued to be a security concern throughout the war. However, US security measures in the Canal Zone, allied naval superiority, and the canal's geographic isolation from the two theaters of war provided a secure environment for uninterrupted canal operations during the war years.

### **The Suez Crisis and the Panama Canal**

In the aftermath of World War II, the United States, despite its preoccupation with the Soviet threat, sought to diffuse a resurgence of anti-Americanism and discontent in Panama with a new treaty arrangement. The result, the Treaty of Mutual Understanding and Cooperation, was signed 25 January and entered into force 23 August 1955. The treaty provided some symbolic, largely pecuniary concessions but did little to address the root cause of the problem. Many Panamanians perceived the American presence in Panama, with Americans protected and privileged in the Canal Zone, as incompatible with their national aspirations.

Great Britain experienced similar pressures in the Middle East. In Egypt, the forces of nationalism and Arab unity led Britain to re-examine the terms of a 1936 bilateral agreement that had allowed it to maintain military forces in Suez. Aggravating tensions, Egyptian customs inspectors began to search ships and seize cargo bound to or from Israel. Britain was reluctant to agree to a timetable for troop withdrawal because of concern for the tenuous balance of power in the Middle East. By October 1951, Egyptian frustrations with British obstinacy resulted in Egypt's unilateral abrogation of the treaty. Britain rejected Egypt's declaration and promptly sent reinforcements to Suez.

Tensions mounted as nationalist rhetoric increased and Egypt expanded its search and seizure of Israeli ships and cargo. finally, in July 1954, Egypt and Britain reached agreement for the withdrawal of all British forces within twenty months of the signing. The agreement, signed 19 October 1954, afforded Britain the right to retain

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some parts of bases in Suez, ready for immediate use by British forces in the event of armed attack by an outside power on Egypt. The treaty, to remain in force for seven years, also reaffirmed the contracting parties' determination to uphold the tenets of the 1888 Constantinople Convention. Despite this reaffirmation, Egypt continued to interfere with Israeli use of the canal.

As Britain withdrew forces from Suez, Egypt under Nasser's leadership began to cultivate contacts with the Soviet Union. By September 1955, Nasser had arranged an arms deal with the Soviet Union and Czechoslovakia for fighters, tanks, and artillery in exchange for Egyptian cotton. In May 1956, Egypt formally recognized the People's Republic of China; a month later, the last of the British forces withdrew.

The stage was now set for confrontation. On 19 July 1956, Britain and the United States withdrew an earlier offer to finance the Aswan High Dam. One week later, Nasser ordered the nationalization of the Suez Maritime Canal Company and announced that canal revenues would be used to finance the dam project. Canal employees were ordered to continue working, and shareholders, mainly British and French, were promised compensation. As the concessions to the Canal Company were due to expire in 1968 anyway, and as long as shareholders were fairly compensated, nationalization was not at the heart of British concern. Rather, the British and the French were worried about Egyptian intentions with respect to freedom of navigation in the canal. While a flurry of diplomatic activity in London was failing to produce an acceptable compromise, Britain and France planned a joint military operation. Meanwhile, British and French canal employees, including most of the qualified canal pilots, left Egypt.<sup>28</sup>

On 29 October 1956, Israeli forces attacked Egypt and headed for the Suez. Two days later, British and French forces bombarded Egyptian airfields. By 3 November, the canal was unnavigable. After British and French paratroopers deployed, and under intense international and US

pressure, all parties agreed to a cease-fire on 6 November. A UN peacekeeping force deployed to Egypt, and by 22 December all British and French troops had withdrawn.

Although Egypt suffered the most casualties and damage, the British and French suffered greatly diminished prestige. Egypt retained control over the canal while British and French salvage teams cleared the canal of more than 40 sunken ships. Egypt resumed and expanded the nationalization of foreign businesses. The canal reopened to international shipping, except to Israeli commerce, in April 1957. Egypt justified discrimination against Israel on the basis of the state of war that existed, and of an 1888 Convention that gave Egypt the right to take whatever measures necessary to guarantee its security. Ten years after reopening, the Suez Canal again became a casualty of war. The Six-Day War, 5–10 June 1967, closed the canal, and the 1973 Yom Kippur War kept it blocked. Not until 5 June 1975, after being closed for eight years, did the canal resume normal operations. Egypt continues to exercise exclusive sovereign rights over the canal.

The Suez Crisis, coming on the heels of the new treaty between the United States and Panama, naturally led to comparisons of the two canals with respect to their international legal standing. Secretary of State Dulles was quite clear, though, in refuting any similarity:

there has been a good deal of speculation as to possible similarities between the Suez Canal and the Panama Canal. Actually, the situation is totally dissimilar in two vital respects. First, the judicial, the legal aspect of the problem. The Suez Canal by the Treaty of 1888 is internationalized. The Panama Canal is a waterway in a zone where, by treaty, the US has all the rights which it would possess if it were the sovereign. . . . And there is no international treaty giving other countries any rights. . . .

Now the second aspect of the matter . . . is the practical situation. In the case of the Suez Canal a large number of

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countries, whose very livelihood almost depends upon the free and efficient and impartial operation of the canal, are in fact gravely disturbed because they fear that there will not be that kind of operation and that their lifeline—and to them it is almost literally a lifeline—that their lifeline may be cut. As far as I am aware, no country anywhere in the world fears that its economy is jeopardized by possible misuse, abuse, of our rights in the Panama Canal.<sup>24</sup>

The differences between the two canals were, at the time, far more abundant than the few similarities. Latin America and Panama have provided, in stark contrast to the turmoil of the Middle East and Egypt, a relatively stable regional environment for an international waterway. Sovereignty over the Suez Canal, and responsibility for ensuring it remained always "free and open, in time of war as in time of peace, to every vessel," were reposed in Egypt by international convention. Within the Panama Canal Zone, the United States exercised all rights "as if it were the sovereign" according to a bilateral treaty with Panama.

Nevertheless, Dulles may have ignored a fundamental similarity. Each canal is a manmade waterway that slices through the territory of a sovereign state. Each canal has been perceived as impinging on the sovereign rights and as serving to frustrate the national aspirations and full economic development of the host nation. With the passage of time, the distinctions between the two waterways have blurred and have become overshadowed by this fundamental similarity. By the spring of 1978, US Senate ratification of the Panama Canal Treaty would remove once and for all any lingering doubts with respect to sovereign rights in the land and water areas adjacent to the canal. Moreover, upon treaty expiration on 31 December 1999, Panama will assume full responsibility for the management, operation, maintenance, and regulation of the Panama Canal, and only Panama will maintain military forces within its territory.

The remaining historical difference—a historical difference now becoming a similarity—between the Suez Canal and the Panama Canal lies in the realm of geopolitics and regional conflict. Developments in Central America since ratification of the Panama Canal Treaties point to mounting regional instability and serious challenges to the canal's permanent neutrality and operation after the turn of the century.

### THE NEUTRALITY TREATY AND THE FUTURE

THE RANGE OF CHALLENGES to the Panama Canal's operation and regime of neutrality after 1999 are certain to be broader, more diverse, and more demanding than those presented during the canal's first 75 years. Conversely, the withdrawal of US forces not later than 1999 will eliminate a significant capability of the United States to respond militarily. What can threaten the canal? Regional conflicts, communist insurgencies, movements for nuclear-free zones and zones of peace, the war on drugs, the Latin America debt crisis, environmental concerns, international terrorism, civil disobedience and political unrest, fierce economic competition, and a host of other problems will challenge the political leadership and national resources of all countries, including Panama and other countries of Central America, in the twenty-first century. So it is prudent to consider now how the canal might be affected and how the United States might respond in terms of the Neutrality Treaty.

#### **The Neutrality Treaty of 1977**

An important point in considering the treaty and related amendments, conditions, reservations, and understandings is which country has the active role in the essential provisions. The one-sentence preamble states that the United States and Panama "have agreed upon the following," but it is Panama in the first two articles which "declares that

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the Canal, as an international transit waterway, shall be permanently neutral" and "declares the neutrality of the Canal in order that both in time of peace and in time of war it shall remain secure and open to peaceful transit by the vessels of all nations on terms of entire equality." Article III, delineating rules to ensure the security, efficiency, and maintenance of the canal, includes the statement,

Vessels of war and auxiliary vessels of all nations shall at all times be entitled to transit the Canal, irrespective of their international operation, means of propulsion, origin, destination or armament, without being subjected, as a condition of transit, to inspection, search or surveillance. However, such vessels may be required to certify that they have complied with all applicable health, sanitation and quarantine regulations. In addition, such vessels shall be entitled to refuse to disclose their internal operation, origin, armament, cargo or destination.<sup>30</sup>

The maintenance provisions of the treaty are provided in articles IV and V, and are subject to amplification by various amendments, conditions, and understandings. According to article IV, both the United States and Panama agree "to maintain the regime of neutrality established in this Treaty, which shall be maintained in order that the Canal shall remain permanently neutral." Amendment 1 pertains to this article and provides "a correct and authoritative statement of certain rights and duties of the Parties":

The correct interpretation of this principle is that each of the two countries shall, in accordance with their respective constitutional processes, defend the Canal against any threat to the regime of neutrality, and consequently shall have the right to act against any aggression or threat directed against the Canal or against the peaceful transit of vessels through the Canal.

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This does not mean, nor shall it be interpreted as, a right of intervention of the United States in the internal affairs of Panama. Any United States action will be directed at insuring that the Canal will remain open, secure, and accessible, and it shall never be directed against the territorial integrity or political independence of Panama.<sup>31</sup>

Additionally, an "understanding" applicable to this article reiterates,

either of the two Parties to the Treaty may, in accordance with its constitutional processes, take unilateral action to defend the Panama Canal against any threat, as determined by the Party taking such action.<sup>32</sup>

Article V refers to the termination of the Panama Canal Treaty to reiterate that after 1999 only Panama may operate the canal and maintain military forces within its borders. Not only must US forces have been withdrawn by that time (unless a new treaty provides for a US military presence), but no other foreign military forces or installations may be maintained in Panama. This article is subject to amplification by the "De Concini reservation" that became a condition for Senate ratification:

if the Canal is closed, or its operations are interfered with, the United States of America and the Republic of Panama shall each independently have the right to take such steps as each deems necessary, in accordance with its constitutional processes, including the use of military force in the Republic of Panama, to reopen the Canal or restore the operations of the Canal, as the case may be.<sup>33</sup>

Keeping in mind that Panama agreed in the protocol exchanging ratifications that the treaties were to be applied together with the amendments, etc., the United States clearly has the right and the responsibility to take unilateral

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action and to use military force if necessary. The only caveat to independent US action is that it must not be directed against the territorial integrity or political independence of the Republic of Panama.

Article VI of the Neutrality Treaty entitles US and Panamanian naval and auxiliary vessels to expeditious transit. This article interpreted in the Senate's resolution as meaning "without any impediment, with expedited treatment, and in case of need or emergency, to go to the head of the line."<sup>34</sup> The nation operating the vessel is to determine need.<sup>35</sup>

The final article of the treaty that bears directly on permanent neutrality is article VII. This article invites all the nations of the world to join a protocol in which they may acknowledge the objectives of the treaty and agree to respect the regime of neutrality. By the beginning of 1989, 36 nations, including the Soviet Union, have become parties to the protocol.<sup>36</sup> This protocol does not make the Neutrality Treaty a multilateral agreement, as was the 1888 Constantinople Convention, but it does place it clearly in the international arena as a matter of legitimate interest and diplomatic scrutiny.

### **Current Problems**

Treaties tend to be interpreted in ways that support the national objectives of the contracting parties. In the case of the Neutrality Treaty, as long as US and Panamanian national objectives are in fundamental agreement, the treaty stands a good chance of achieving its stated purpose. However, when the two sets of national objectives begin to diverge, the agreement will probably become increasingly difficult to maintain.

What are the national objectives with respect to the Neutrality Treaty? Simply stated, the United States wants for itself and its allies and trading partners, unimpeded use of the international waterway that crosses the Isthmus of Panama. What does Panama want? Without doubt, the



canal is Panama's chief economic resource, and its uninterrupted operation is in Panama's own best interest. But there is an additional, larger dimension to Panama's treaty objectives, and that is the issue of national sovereignty.

The fundamental assumption on which the Neutrality Treaty rests is that of US-Panamanian cooperation. The 1977 treaties recognized that, for the United States, the "best way of insuring permanent access to the canal is not our exclusive or perpetual control of its operation, but rather the active and harmonious support of the Panamanian population."<sup>37</sup> With active Panamanian support and under the banner of permanent neutrality, the United States can provide superpower resources to protect the canal from the most probable, though not all, threats. Without Panamanian support, the United States is severely handicapped.

During the years in which the treaties have been in force, US-Panamanian relations have not always been harmonious. Relations began deteriorating in 1987 with allegations that General Noriega was involved in drug trafficking and other illegal activities. In February 1988, Noriega was indicted by federal grand juries in Florida on drug trafficking and corruption charges. Intense US diplomatic and economic pressure to force Noriega's ouster has seriously damaged the Panamanian economy and aroused anti-American sentiment. How the December 1989 US military operation to capture Noriega will affect US-Panamanian relations over the long term is still unclear. Meanwhile, opposing selective perceptions and interpretations of treaty rights and obligations have led to charges and counter-charges of treaty violations and malicious intent to destroy the agreement. Within this highly charged atmosphere, US-Panamanian cooperation might become largely fictional, with the survival of the treaty resting on the soon-to-conclude US military presence in Panama.

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### **Strategic Implications**

The most contentious issue involving US-Panamanian relations and the Neutrality Treaty, now and in the future, is the permanent right of the United States to act unilaterally to restore the canal's operation and neutrality. Until the year 1999, Panamanian attention will remain fixed on the US military presence in Panama. Thereafter, attention will shift to the Neutrality Treaty and the ever-present threat of US intervention. As General Torrijos reportedly stated at the treaty signing ceremony, Panama remains under "the protective umbrella of the Pentagon," and the Neutrality Treaty could become, if not judiciously administered, an "instrument of permanent intervention."<sup>38</sup> The potential for unilateral US action will be sufficient cause to incite anti-Americanism on demand in Panama for whatever domestic political purpose it might serve.

Numerous scenarios of threats to the canal might suggest unilateral US action and the use of military force. These scenarios include isolated acts of terrorism, regional conflict, global war, and Panamanian domestic turmoil. In each instance, the circumstances must be examined to determine the suitability, feasibility, and acceptability of using US military forces to protect the canal.

In the case of a determined terrorist threat, US forces in Panama would provide little if any deterrent value. In fact, a US military presence in Panama might attract terrorist activity. US forces might be able to upset a terrorist plot once discovered, but not necessarily more effectively than could a properly trained and equipped Panamanian police force.

At the other end of the spectrum, a major conventional air attack on the canal by a major military power could not be thwarted by a US military presence and air defense facilities in Panama alone. Such facilities would merely form the inner defense zone, requiring augmentation by mobile air defense systems at extended ranges. The limited military utility in countering external hostile threats provides little

rationale for introducing US forces into Panama without the active support of the Panamanian government. To do otherwise invites Panamanian resentment and a resurgence of anti-Americanism at the very time US-Latin American solidarity would be most needed.

The high risk and low return of using US forces in Panama in defense of the canal does not suggest that the United States should do nothing. Regardless of the state of US-Panamanian relations when confronted with a threat to the canal, the United States could appeal to the Panamanian government for its cooperation and to the Organization of American States (OAS) and United Nations for support. If Panama remained unwilling to host US forces, then naval and air forces should be used as available consistent with other defense priorities.

Panamanian domestic affairs provide the most fertile ground for likely challenges to the canal's operation and neutrality. The canal, the principal economic asset of Panama, is a symbol of the government's legitimacy and of past American imperialism. The canal would thus prove a tempting target for disaffected domestic political parties and externally supported insurgent groups of many persuasions. A well-organized labor or insurgent campaign to disrupt canal operations, sabotage facilities, and harass ships in transit would seriously weaken the Panamanian economy and undermine the government's legitimacy.

In this volatile, uncertain political environment, only one set of circumstances would clearly point to US military intervention in defense of the canal. Were a popularly elected Panamanian government to request US forces as part of a comprehensive security assistance package, then US military involvement would be appropriate. Only with the active cooperation of a popularly elected Panamanian government could US forces effectively counter an insurgent threat and remain largely immune to accusations of *Yanqui* intervention.

In the absence of a popularly elected government in Panama, the United States should proceed cautiously

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before responding favorably to a Panamanian request for military assistance or exercising the treaty right of unilateral intervention to protect the canal. A decision to provide US military assistance for the legitimate defense of the canal might easily be perceived by opposition elements as US support for a repressive dictatorship or minority regime. On the other hand, if the United States were to move too slowly in providing security assistance, the Panamanian government could charge the United States with abandoning its treaty responsibilities and seek assistance elsewhere. In either case, the United States would risk losing a great deal of influence and credibility in the hemisphere.

A unilateral US decision to use military force to protect the canal, without the consent of the Panamanian government, would be detrimental to long-term US interests and objectives in Panama and Latin America. Given a popularly elected but fragile Panamanian government, the introduction of unwanted US armed forces would further incite opposition and insurgent elements and might hasten rather than prevent the government's demise. Conversely, unilateral US action permitted by the Neutrality Treaty but at odds with a dictatorial regime might inadvertently strengthen the regime by diverting opposition attention from domestic issues to a common external threat.

Any threat to the canal's operation and neutrality stemming from Panamanian domestic politics presents an unsatisfactory array of high-risk alternatives for US decisionmakers. Under such circumstances, the United States should seek an international response to the crisis. A mandate from the OAS or UN could provide international support for US military assistance, or the assignment of an international peacekeeping force. Such a force under OAS sponsorship would be capable of protecting the canal and shipping from Panamanian domestic violence without endangering a fragile democracy or strengthening the grip of a dictatorship.

One more scenario to be considered is that of Panama taking the last step in asserting its political independence and sovereignty. In the absence of the Joint US-Panamanian Canal Commission and the US military presence after 1999, some future government might feel confident enough to complete the nationalization of the canal. With or without formally abrogating the Neutrality Treaty, Panama could exercise its political independence through its administration of canal operations. A government that valued its political independence more than economic realities could politicize the canal's operations through graduated toll schedules, selective enforcement of inspection regulations, and other discriminatory administrative practices. In such a way could the canal become an instrument of national power as did Nasser's Suez Canal.

Noting the example of British and French intervention in the 1956 Suez Crisis, the United States would be well advised to avoid the use of military force in responding to a similar crisis in Panama. Resorting to military force would most likely backfire, resulting in greater damage to the canal, US-Panamanian relations, and US prestige than would otherwise occur. Instead, the United States should assert its diplomatic leadership in Latin America and around the world to pressure Panama into behaving as a responsible member of the international community.

PERMANENT NEUTRALITY is a recognized legal principle that can effectively regulate international behavior. The Panama Canal Treaties of 1977 represent the logical progression of US-Panamanian relations. The Neutrality Treaty is first and foremost a compromise agreement between two sovereign states, each having unique national interests and objectives. The treaty adequately protects US national interests by ensuring US and international access to the canal. If need be, the United States can, without Panamanian consent,

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take unilateral action to defend the canal's operation and permanent neutrality. The neutrality regime does not vitiate Panama's sovereignty, nor does it necessarily restrict the United States' freedom of action.

The range and complexity of challenges that face the Neutrality Treaty, the canal, and Panama continue to grow, while the US ability to effectively respond continues to diminish. Panamanian support is essential for effective use of US military power should the need arise. Unilateral action that includes the use of military force should only be considered after weighing the benefits, risks, and long-term US interests in Latin America. In this regard, perhaps most crucial is the imperative to clearly define political and military objectives before using the military element of national power.

The most immediate challenge confronting the canal and the Neutrality Treaty is the danger of domestic political crisis in Panama. After the withdrawal of US forces in 1999, the United States will be forced to rely more heavily on the non-military elements of national power. The exercise of the political, economic, and socio-psychological elements of power must compensate for the loss of the deterrent value previously provided by the US military presence in Panama. The United States should therefore attempt to divorce the canal and the Neutrality Treaty from public discussion and policy statements on US-Panamanian relations. The United States must resist Panamanian efforts to politicize the canal by keeping domestic and international attention focused on relevant issues of responsible government in Panama. Official discussion of the canal and the Neutrality Treaty should emphasize their international character. In this regard, the United States should capitalize on the diplomatic potential of the protocol to the Neutrality Treaty by seeking broader international acceptance and acknowledgment of the treaty.

US policymakers must advance beyond any sentimental attachment to the canal and focus instead on long-term

strategic objectives in Latin America. A farsighted strategic vision can produce the consistent, non-partisan foreign policy the United States needs in order to build the hemispheric solidarity and resolve necessary to meet common challenges in the century ahead.

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30. The Neutrality Treaty, Article III.
31. Various amendments, conditions, reservations and understandings were contained in the Senate resolution of 16 March 1978 advising and consenting to ratification of the Neutrality Treaty. These amendments, etc., were delivered to and acknowledged by the government of Panama in the protocol exchanging the instruments of ratification on 16 June 1978. The amendments, etc., were delineated again in the Presidential proclamation of 24 September 1979 (hereafter referred to as "Senate resolution").
32. Senate resolution, Understanding (2).
33. Senate resolution, Condition (1).
34. Senate resolution, Amendment (2).
35. Senate resolution, Understanding (3).
36. The other parties to the Protocol are: Argentina, Barbados, Belize, Bolivia, Chile, China (Taiwan), Costa Rica, Denmark, Dominican Rep., Ecuador, Egypt, El Salvador, Equatorial Guinea, Finland, Fed. Rep. of Germany, Guatemala, Honduras, Israel, Jamaica, Korea, Liberia, Malawi, Netherlands, Nicaragua, Norway, Philippines, St. Vincent & the Grenadines, Saudi Arabia, Spain, Sweden, Tunisia, United Kingdom, Uruguay, Venezuela, and the Soc. Rep. of Vietnam. Listed in US Department of State, *Treaties in Force: A List of Treaties and Other International Agreements of the United States in force on January 1, 1988*. Dept. of State Publication 9433 (Washington, Government Printing Office, 1988).



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## 4

# **ANTISATELLITE WEAPONS: A STRATEGIC ANALYSIS**

*PAUL D. NIELSEN*

**A**FTER THIRTY YEARS OF EXPLORATION AND EXPERIMENTATION in space, the United States is still struggling with the concept of a national strategy for space. Although the tendency is to view space as a separate regime with separate issues, space is really the most all-encompassing geostrategic environment. Military dependence on space assets is large and growing; civilian dependence is increasingly significant. As this dependence grows, the unresolved question of antisatellite weapons, or ASATs, becomes ever more important. Some analysts think of space as the "ultimate high ground," so crucial as to require absolute space control, which can only be achieved with defensively capable satellites (DSATs) and deployed, responsive ASATs. Others consider space a sanctuary, a place for man to exercise restraint and to demilitarize through arms control agreements. A strategic decision on ASAT development requires due consideration of both the perceived threat and the consequences of the development itself.

### **SPACE AS A GEOSTRATEGIC MEDIUM**

SPACE IS A GEOSTRATEGIC MEDIUM, even more expansive and enveloping than the sea or air. Despite the rhetoric

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Lieutenant Colonel Paul D. Nielsen, US Air Force, wrote this essay while studying at the National War College. The essay won recognition in the 1989 JCS Strategy Essay Competition.

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of both the United States and the Soviet Union, both of which have consistently professed a pristinely peaceful intent, space has been used as an arena for national power projection since the launch of the Soviet Sputnik I on 4 October 1957 and the American Explorer I on 31 January 1958. These early flights and subsequent missions, most notably many of the manned missions, were obvious and powerful demonstrations of national prestige and technical prowess.

Even before these first tentative steps into space, the militarization of space was beginning. The Rand Corporation had begun looking at the military utility of space as early as 1946 and the US Army tested its first strategic missile, the Redstone, in 1953 under the direction of Dr. Werner Von Braun. In 1954, the US Air Force was directed to begin development of an "Advanced Reconnaissance System" satellite. Lockheed was awarded the prime contract in 1956.<sup>1</sup>

The first military satellite was launched on 10 December 1958.<sup>2</sup> Project Score, developed by the Advanced Research Projects Agency, was a prototype communications satellite that transmitted military teletype during its twelve-day life. Operational militarization of space began on 10 August 1960 when, after twelve successive failures, Discovery 13 launched the Central Intelligence Agency's KH-4 photoreconnaissance satellite, which successfully returned its exposed film to earth in a small recoverable capsule.<sup>3</sup> From that point on, US military and intelligence organizations have developed a stable of satellites performing such missions as surveillance, reconnaissance, communications, geodesy, navigation and meteorology. Today these satellites form an indispensable core of the nation's command, control, communications, and intelligence network.

Soviet development followed roughly the same pattern. The Soviets have crafted a space program that places a heavier emphasis on manned flights but includes

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an impressive array of specialized, shorter-lived unmanned satellites. Compensating for technical constraints imposed by, among other things, shorter satellite lifetimes, the Soviets have maintained a faster launch rate over many years.

As a result, both the United States and the Soviet Union find themselves significantly dependent on their space assets. The economy and technical capabilities of communications satellites, for example, have led the US defense establishment to use them for over 70 percent of its peacetime long-haul communication needs and approximately 95 percent of US Navy communications.<sup>4</sup> Similarly, strategic warning and reconnaissance missions are almost exclusively performed from space.

## WEAPONS IN SPACE

THE AIR FORCE BEGAN its first studies on ASATs in 1956.<sup>5</sup> That work led to the first test of an ASAT system on 13 October 1959, a test judged a success based on the proximity of intercept and the system's proposed nuclear warhead. In the early 1960s, the Navy began studies of a non-nuclear warhead that would destroy a satellite by means of a swarm of steel pellets. Those studies led to exploratory tests of an air-launched ASAT in 1962.

These early ASAT concepts were directed against a bigger anxiety than communication satellites or reconnaissance systems. The fears that fueled these developments were of an orbital bombardment system (OBS) or a fractional orbital bombardment systems (FOBS). The United States feared that the Soviet Union was developing an OBS, a system that would place a nuclear warhead on an orbiting satellite. Upon ground command, the satellite would send its warhead to earth, with the target having less than three minutes' warning time.

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The Outer Space Treaty of 1967 contained specific language that prohibited orbital bombardment systems, but was unclear on FOBS. Instead of following the ballistic path of conventional ICBMs, a FOBS would follow an orbital path, but before completing an orbit would decelerate and direct its warhead against its target. Instead of following an ICBM's path thousands of miles over the North Pole, an FOBS would follow a depressed trajectory at an altitude of 100 to 200 miles and could attack the United States from any direction. The first specific bilateral prohibition of FOBS was in the unratified SALT II treaty of 1979.

The fear of a Soviet OBS in the early 1960s now seems to have been primarily an American anxiety upon which the Soviets played. The FOBS fear was more real. The Soviets tested fractional orbits beginning in 1966-67. FOBS testing ended in 1971, probably due to the advent of the ABM Treaty, which ensured no massive defense against ICBMs.

Meanwhile, the United States pressed on with development of an operational ASAT. The Army began development of an ASAT variant of its Nike Zeus missile in 1962. Originally codenamed Mudflap and later known as Program 505, the Nike Zeus ASAT depended on a nuclear warhead. On 24 May 1963, the system achieved its first successful satellite intercept.<sup>6</sup> By 1 August 1963, the system was declared operational, although the concept of operations was severely limited. The Air Force began work on a direct ascent ASAT in 1962. By late 1963, prototype deployment was complete and the system, a Thor booster and a 1.5-megaton nuclear warhead, was declared operational in June 1964.<sup>7</sup> The Nike Zeus system remained operational until 1967, when it was phased out in favor of the Air Force's Thor system, which remained operational until 1975 although its capabilities were limited. The Thor system was always viewed more as a desperate defense against an orbital bomb than as a true ASAT.

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The modern era of ASATs began in 1968 when the Soviets first tested their co-orbital ASAT. A total of seven tests were conducted from 1968 to 1971. The system may have attained limited operational status in 1971. In 1976, the Soviets initiated a new test series of the system with dismal results. But the Soviets' resumption of testing convinced the Ford administration to pursue an ASAT program. The Carter administration continued this effort, but also sought arms control negotiations on the issue of ASATs. During this period, the United States developed an F-15 launched ASAT that successfully completed its test phase. Budget pressures in the late 1980s terminated the program before production.

### ASATS AND ARMS CONTROL

ALTHOUGH MANY TREATIES and agreements have addressed space issues, none have explicitly prohibited ASATs. Nevertheless, the close relationship between ASATs and anti-ballistic missiles (ABMs) or ballistic missile defense (BMD) has made several bilateral or multi-party agreements relevant to ASAT development and deployment.<sup>8</sup> Among these are the following:

*The Limited Test Ban Treaty of 1963.* This treaty bans nuclear explosions in outer space, thus prohibiting testing of nuclear warheads for ASATs or ABMs. It also prohibited further testing of the Argus effect, predicted and tested by Christofilos. The Argus test used a nuclear explosion to pump the magnetosphere. Satellites in orbit in this excited region suffered widespread electronic degradation.

*The Outer Space Treaty of 1967.* Article 4 states that signatories will not place in orbit "any objects carrying nuclear weapons or any other kinds of weapons of mass

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destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner."

*The International Telecommunications Convention and related agreements.* These agreements attempt to minimize satellite radio-frequency interference.

*The Hot-Line Modernization Agreement of 1971.* The provision of this agreement to establish and maintain two satellite links indicates that these links should be excluded from any ASAT attack.

*The Measures to Reduce the Risk of Nuclear War of 1971 and the Prevention of Nuclear War of 1973.* These agreements call for notification and confirmation of interference with early-warning and communication satellites. They do not prohibit attacks on these satellites but seek to avoid catastrophic responses to unintentional interference.

*The Anti-Ballistic Missile Treaty of 1972.* Article V prohibits development, testing, and deployment of sea-based, air-based, space-based, or mobile land-based ABM systems or components. Article XII restricts each party from interfering with the other party's national technical means of verification. Article V does not prohibit ASATs, but Article XII indicates ASATs should not be used against ABM Treaty verification systems.

*The Interim Agreement on the Limitation of Strategic Offensive Arms of 1972 (SALT I).* This agreement reiterated the ABM Treaty's prohibition of interference with national technical means of verification.

*The Convention on Registration of Objects Launched into Outer Space of 1975.* This convention requires that each country provide the Secretary-General of the United

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Nations with information about each space launch. The information is to include the general mission or function of the satellite. Unfortunately, neither the United States nor the Soviet Union has lived up to the intention of this UN convention. Since 1975, neither side has registered any satellite as having a military purpose, much less as being a test of an ASAT.

*The Treaty of the Limitation of Strategic Offensive Arms (SALT II) of 1979.* This treaty was never ratified, but both the Soviet Union and the United States have professed to follow its principles, which include a reiteration of non-interference with national technical means and a prohibition on placing nuclear weapons or any other weapons of mass destruction into orbit. This treaty extends the prohibition to fractional orbital missiles, a point of contention between the superpowers in previous treaties.

The United States and the Soviet union discussed possible limitations on ASATs specifically in 1978 and 1979. These discussions fell apart for two reasons: the Soviet Union's insistence on classifying the US Space Shuttle as an ASAT platform and the US protest over the Soviet invasion of Afghanistan.

## A NEW ANALYTICAL FOUNDATION

THE US POSITION on antisatellite weapons requires review, possibly reformulation, and certainly more coherent crystallization. Numerous other reviews of ASAT policy have taken place in the last years, among them the Aspen Study Group's 1985 review and that of the Commission on Integrated Long-Term Strategy in 1987-88.<sup>9</sup> ASAT strategy has been plagued not by a lack of perceptive review but by failure to gain a national consensus on a course of action. Apparently the arguments have not



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been sufficiently compelling, the prescriptions not catalytically persuasive.

With this in mind, I want to recast the discussion in a simplified framework. I analyze the threat at specific points along the spectrum of conflict and consider the impact of ASATs at each point to arrive at an acceptable state of threat against US space assets. A comprehensive national ASAT policy must address the threat adequately at all levels of conflict.

Throughout the spectrum of conflict—from peace to nuclear war—the United States depends on space assets for numerous military missions. These assets and these missions face varying levels of threat from an opponent's ASATs. From the US perspective, this is the defensive side of the ASAT issue.

I could perform my analysis considering all potential opponents. Currently, however, the Soviet Union is the primary space power that could be involved in a conflict with the United States. Therefore, I will concentrate on the threat posed to the United States by the Soviet Union.

Although the spectrum of conflict is a continuum, for our purposes here, four states of conflict can characterize the most significant variations in the spectrum: peace, limited war, conventional war, an nuclear war. Analysis of each of these conflict states is important because US and Soviet dependence on space assets varies across the spectrum as does the threat.

### SPACE STATES

THE ENVIRONMENT in which space assets operate is the "space threat state." The space threat state represents the vulnerability of American and Soviet satellites. Vulnerability is a combination of technical and political aspects—not only technical feasibility but political intent.

## ANTISATELLITE WEAPONS

The following table summarizes the four major space threat states:

<i>US space assets</i>	<i>USSR space assets</i>	
	<i>Secure</i>	<i>Vulnerable</i>
<i>Secure</i>	Space sanctuary	US space control
<i>Vulnerable</i>	USSR space control	Space battlefield

*Space sanctuary* defines that state in which both US and Soviet space assets are secure. This security could be the result of technological constraints, effective ASAT arms control, general deterrence, or specific deterrence. General deterrence would imply that although one or both sides had the capability to attack satellites, restraint was exercised to prevent escalation that could be uncontrollable. Specific deterrence implies that although attack capability existed, restraint was exercised because of countervailing ASAT capabilities and the value of space assets.

*US space control* defines that state in which the United States can control the space war in a manner that retains sufficient American space assets while denying the Soviets the use of their valuable satellites. US space control could be achieved via US ASAT capability with no countervailing Soviet capability or by a combination of defensively capable US space assets and US ASATs capable not only of attacking Soviet satellites but also of protecting American satellites from attack.

*Soviet space control* defines that state in which the Soviet Union can control the space war in a direct reverse of US space control.

*Space battlefield* defines that state in which neither side can control the space war but both sides have the capability—technologically and politically—of attacking the opponent's assets. The limit of the space battlefield

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is the space desert, in which no militarily useful satellites remain.

From a US perspective, assigning absolute priorities to these states is problematic. Clearly, the United States would prefer US space control to Soviet space control in any scenario, but the relative merits of a space sanctuary or a space battlefield (or even a space desert) are not clear. A choice depends on the relative value of Soviet and American space assets and the effectiveness with which each side can employ those assets to achieve military goals.

For example, in a Pacific war, the effectiveness of Soviet radar ocean reconnaissance satellites (RORSATs) and electronic intelligence ocean reconnaissance satellites (EORSATs) in locating, targeting, and destroying US naval forces may be so decisive that the United States would prefer a space battle to a sanctuary. On the other hand, in a limited war on the Soviet periphery, where the United States is dependent on communication satellites for command and control and reconnaissance satellites for intelligence and targeting, a space sanctuary would be more desirable for the United States than a space war.

When an economic dimension is added into the analysis, even the merits of US space control versus a space sanctuary or a space battlefield become more tenuous. At what price does US space control become undesirable? What limits to absolute US space control are acceptable compared to the costs of achieving it? These are questions that cannot be answered theoretically. Only continuing debate, threat analysis, and the annual budget struggle can decide the answers, and then only for an instant.

#### **CAN PEACE AND THE ASAT COEXIST?**

DURING PEACETIME, the United States and the Soviet Union have proven that they can coexist in space, not

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only with each other but also with other nations. They have coexisted despite varying levels of tension and brinkmanship, despite political rhetoric, despite military bellicosity. Although the United States has pursued several ASAT programs during the space era, it has been content with a space sanctuary.

In fact, the United States worked hard to establish the concept of a space sanctuary. Sanctuary was vital for the development, operation, and legitimacy of space reconnaissance and surveillance, two of the earliest military space missions. The space sanctuary that has existed, whether by tacit agreement or technological constraint, provided the environment for the United States to exploit space aggressively, leading to today's constellations of military and civilian satellites. This benign environment contributed to the growing dependence on space assets for numerous military missions—reconnaissance, surveillance, communications, navigation, meteorology, geodesy. From 1959 to 1984, the US government invested almost \$400 billion (in 1984 dollars) on space exploration and development.<sup>10</sup> Reconnaissance satellites have contributed significantly to international stability by providing strategic intelligence and by reassuring policymakers as they negotiate arms control and other international agreements. Communication satellites allow responsive, measured, informed decisions by military commanders and key civilians, in addition to providing the important Hot-Line between the leaders of the United States and the Soviet Union. Surveillance satellites are crucial to preventing accidental or preemptive nuclear war during periods of rising tensions. Other military support missions such as geodesy, navigation, and meteorology are everyday activities in support of US military missions.

Although this peacetime dependence is large, it is not total. Alternatives do exist, although they are often more costly or more cumbersome. More important than a

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quantitative determination of dependence, however, is a realistic assessment of the threat. In peace, this threat appears minimal. Although both the United States and the Soviet Union have possessed operational antisatellite systems for at least some part of the space era, and although each side has had unilateral ASAT capability for part of this period, the fact remains that no ASAT has ever been fired in anger—no space asset of either side has been damaged belligerently.<sup>11</sup>

Consequently, precedent has shown that, during peace, US space control is not necessary. A space sanctuary is adequate for US military missions, and the threat posed by Soviet space assets, such as reconnaissance satellites, is acceptable. The cost of moving beyond a space sanctuary to US space control is not justified for peacetime missions.

How might a space sanctuary be maintained into the future? The forces that led to over 30 years of space sanctuary from 1957 to the present yield some clues. First, technical and operational infeasibility prevented ASAT use for much of the space age. Although technical infeasibility no longer precludes ASAT use, the United States has no operational ASAT and the Soviet operational capabilities may still be too rudimentary for effective use. Second, a lack of intent, despite capability, has prevented ASAT use for part of this period. This condition may extend into the future. There may be no clear rationale for engaging in such a provocative attack during periods of peace. And third, deterrence, both general and specific, has undoubtedly played some role. A Soviet attack on US space assets could easily have led to a similar attack on Soviet assets (at times when the United States had an operational ASAT) or to a spillover terrestrial battle. In a nuclear age in a time of relative peace, there is no clear rationale for such a space attack.

A state of space sanctuary can be maintained during peace, therefore, by several strategies: arms control

which prohibits operational deployments, restraint from provocative acts that could strengthen intent, or military power—an operational ASAT—that promises credible retribution for violation of the sanctuary.

### **ASATs AND LIMITED WAR: AN ESCALATION THREAT**

IN CHARACTERIZING LIMITED WARS, let us assume that these wars do not involve direct confrontation between the United States and the Soviet Union. As in the past, limited wars in the future will include wars between a superpower and a relatively independent force (such as US involvement in the Persian Gulf) and wars between a superpower and a client state of the opposing superpower (such as the United States in Vietnam).

In a war between the United States and a relatively independent force, US space assets would come under no threat. Although the United States currently has no ASAT, the extremely limited space capabilities of most nations other than the United States and the Soviet Union would yield effective space control to the United States.<sup>12</sup> The more relevant case is a limited war between the United States and a Soviet client state. Here, although the past may provide some guide, advancing military missions in space may present new situations.

For the prosecution of limited war at discrete points around the world, the United States depends heavily on its space assets. In the future this dependence may actually increase, as nationalist movements continue to constrain US options with respect to foreign bases, force projection, and even logistic supply. As a consequence, the United States will require responsive, dependable space assets for many military missions in connection with limited war—clearly, communication satellites for effective worldwide command and control as well

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as reconnaissance satellites for remote intelligence gathering.

Limited to these activities, the status quo in space would be adequate for the United States. But these relatively passive military missions may be joined in the near future by more active targeting and weapon guidance missions. Space capabilities in these areas could be decisive. Depending on the effectiveness of these systems, the Soviets could receive pressure from a client to neutralize US satellites. Soviet inaction would imply a certain impotence, but successful action could escalate a limited war into something much more ominous.

For the immediate future it appears the Soviets would not cross this threshold. Current US satellite systems are not so threatening, Gorbachev's initiatives have given the impression of an outbreak of peace around the world, and Soviet capabilities are limited. In the short run, therefore, the threat to limited war space missions appears minimal. However, this is an area of uncertainty and risk. Increased Soviet ASAT capabilities and increased US force enhancement from space could increase the threat.

For the reverse situation, that of the Soviets being involved in a limited war with a US client state, many of the same arguments hold. A modification to these arguments, however, is the fact that the United States has no current operational ASAT; therefore, a client could not bring pressure to bear on the United States for ASAT action against effective Soviet space assets. In addition, the Soviets have not advanced as fast on targeting and weapon guidance from space. As a result, the more challenging case for threat assessment and strategy development is the case of US conflict with a Soviet client.

Consequently, for the near term, a guaranteed state of space sanctuary should also be sufficient for limited war. For the longer term, the prescriptions for maintenance of a space sanctuary during limited war are more

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inclusive than for a peacetime space sanctuary. In addition to the provisions necessary during peace, a limited war space sanctuary may require prevention of unilateral Soviet ASAT capabilities as well as some restraint on the development and use of more offensive space force enhancement capabilities such as targeting and munitions guidance.

### CONVENTIONAL WAR AND ASATs: THE REAL THREAT

PROBABLY MORE OF A PROBLEM for the United States than limited war, of course, would be a major conventional war with the Soviet Union. Such a war would probably be on the periphery of the Soviet Union—most likely in Europe, but potentially elsewhere. In any of the likely cases, though, the Soviets would have the benefit of internal lines of communication.

In a European conflict, the United States would have to use all of its assets to best advantage. Space assets would play an important, possibly decisive, role. Indications and warnings from reconnaissance satellites could make the difference between US victory or a stunning, quick defeat. Wartime reconnaissance would enhance US force application, while surveillance systems would continue to watch for strategic nuclear strikes. Communications along a fluid, non-linear battlefield would be greatly assisted by communications satellites that avoid entangling land-lines and line-of-sight and weather limitations. The advent of precision navigation systems could lead to extremely effective targeting and conventional weapon guidance, which could eliminate the need for tactical nuclear weapons.

The Soviets would also use their space assets to best advantage. Specially important would be their radar ocean reconnaissance satellites (RORSATs) and electronic



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intelligence ocean reconnaissance satellites (EORSATs) used to locate, track, and potentially destroy American naval forces. The Soviet penchant for centralized command and control would be well served by increasing numbers of Soviet communication satellites. Other satellites would watch NATO mobilization, listen to the evolving international political debate, and assess damage inflicted by Soviet forces.

The threat in this case is clear. Soviet ASAT attacks on US space assets would be likely. The technological and operational capability exists today, albeit in a rudimentary fashion. Intent to engage in conflict would already have been established through the onset of conventional hostilities. Deterrence from attacking space assets may be ineffective in this case. On a general level, escalation of the war into space using conventionally armed ASATs would pose no ideological hurdle to the Soviets and would not involve first use of nuclear weapons. (Meanwhile, Soviet nuclear forces and surveillance satellites would continue to deter a US nuclear response.) On a specific level, a potential ASAT exchange would enhance the Soviet side of the correlation of forces, unless the United States could establish space control, which would require impressive US ASAT capabilities as well as stables of spare satellites and launch vehicles. The realm in which deterrence might be effective in space is that of surveillance satellites. The Soviets would probably choose not to attack US surveillance satellites in order to avoid an accidental escalation to general nuclear war.

On the other side of the conflict, Soviet space assets would pose a formidable threat to US assets, especially naval forces. The symbiotic combination of RORSATs and EORSATs is effective and hard to counter. Preemptive Soviet attacks on carrier battle groups and continuing attrition of US strategic sealift could prove decisive in a strictly conventional war. Other Soviet satellites—

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remaining reconnaissance systems, communication systems, etc.—would pose similar but lesser threats to US forces.

Here the United States faces a dilemma. Although a space sanctuary could protect US space assets, it would also put the US fleet at risk. Even if this trade-off appeared reasonable on economic grounds, a space sanctuary could not be guaranteed without a verifiable, comprehensive ASAT arms control agreement. This agreement would have to treat some significant, thorny issues: verification difficulties involving small mobile weapons, emerging alternative technologies such as lasers and particle beams, residual ASAT capabilities represented by ICBMs and ABMs, and related ABM and SDI research. These issues, though formidable, could be resolved by constructive negotiations. If they were, a continuing space sanctuary would be the most economical space threat state for the United States.

On the other hand, without extraordinary bilateral agreements, the best unilateral strategy in a conventional war is to seek US space control. If US intent is to win any unavoidable direct conventional conflict with the Soviet Union, then space assets must be treated as just another force enhancer; space, another battlefield medium like the land, air, and sea. A strategy for US space control in conventional war must include not only operational ASATs but also satellites with more defensive capabilities, spare satellites both in orbit and ready to launch, more secure, redundant ground stations (some perhaps mobile), and improved space surveillance capabilities.

Developing the capability of ensuring US space control is indeed an expensive proposition. Yet from a strictly military viewpoint, it is the most prudent approach. From a national viewpoint, the costs must be balanced against the risk of conventional war over the next 20 to 30 years and the potential for successful ASAT arms control.

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### NUCLEAR WAR: WOULD ASATs MATTER?

IN A MAJOR NUCLEAR EXCHANGE between the United States and the Soviet Union, the worldwide effects would of course be severe. Barring a complete catastrophe, however, the United States would hope to maintain its existence and coherence as a nation throughout the war. Before the exchange, satellites would play a vital role in warning and targeting that could affect the extent of the damage the United States absorbs. Following the exchange, remaining satellites might help the United States in force reconstitution, follow-on attack, and war termination, as well as with civil reconstitution and recovery. Judging the importance of residual assets in these apocalyptic missions is extremely speculative, however. Following a major nuclear exchange, the political infrastructure might be so devastated that it would be impractical to bring national resources to bear upon domestic or international problems.

I believe the threat to US space assets in a nuclear scenario, though it may be considerable, may be irrelevant. Before a nuclear exchange, attempts to attack surveillance satellites preemptively would be so provocative that it would negate the effectiveness of the attempts. Destruction of high-altitude communication satellites would greatly complicate any attempts at war termination or de-escalation. Once the war commenced, nuclear effects on satellites, ground stations, and communication links would cause more widespread chaos than any reasonable number of surgical ASAT attacks.

With or without ASATs, neither superpower could exercise effective space control during a nuclear war. High-altitude satellites might enjoy some measure of sanctuary, but their ground stations would suffer. Low-altitude satellites would degrade from nuclear effects, suffer ground station losses, and have key sensors blinded. Some satellite communication links might be

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functional throughout the exchange, but many would be degraded or unusable.

In this extreme, ASATs appear immaterial. Space control by either side is unlikely. The difference between an ASAT-free space sanctuary and an ASAT-infested space battlefield might be of only passing academic interest compared to nuclear effects and mass destruction of the political infrastructure. Effective space power during the trans-attack and post-attack phases would be served better by the development of survivable, launch-on-demand satellite systems for reconstituting capabilities. Mobility and large numbers of relatively cheap satellites and launchers would increase survivability.

#### **A SUMMARY OF THE THREAT: ARE ASATs NEEDED?**

THROUGHOUT THE SPECTRUM of conflict, an enduring space sanctuary would serve US interests adequately. During peace or even in the case of limited war, the prospects for a continuing space sanctuary appear bright. For the case of general nuclear war, the space state is generally irrelevant—the ability to regenerate forces is more important. For the case of major conventional war, a verifiable, comprehensive ASAT arms control agreement could make a continuing space sanctuary an acceptable goal for US strategy if the United States were willing to trust its fleet's safety to electronic countermeasures.

Unfortunately, major obstacles bar the way to a verifiable, comprehensive ASAT arms control agreement. Without this agreement, the least-risk course for the United States is to work toward US space control, primarily to provide for the case of major conventional war with the Soviet Union. Delays in implementing this policy are justified only with a national recognition and acceptance of strategic risk. Even as the United States

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works toward space control, the potential for an enduring space sanctuary can be increased by the development of a US ASAT as a specific deterrent to Soviet ASAT attacks.

### A PATH FOR ENSURED US ACCESS TO SPACE

BASED ON THE EVIDENCE and analysis I have presented here, I believe the United States should embark on a course that will ensure the nation access to space and continuing use of its space assets, both during peacetime and in case of war. For the United States to follow such a course, I recommend the following initiatives:

1. Continue development and deployment of ASAT systems. These systems should include flexible, responsive weapons that could not only attack enemy satellites but also provide a defensive capability against more primitive ASATs. For example, a pop-up system such as the recently terminated F-15-launched ASAT should have the closing speed and launch flexibility to destroy a slower-closing co-orbital enemy ASAT before it reaches its target. These ASAT systems would be important, not only as the offensive arm of US space control but also as a specific deterrent in the maintenance of a space sanctuary.

2. Continue research on more exotic, less traditional ASAT technologies. Work on lasers, particle beams, jamming, and spoofing should continue. Non-destructive, "plausibly deniable" ASAT methods may prove the most beneficial in low-intensity conflicts, yet provide great capability in a major confrontation. For example, spoofing a reconnaissance satellite with false commands could prevent it from accomplishing its mission over a critical area in a minor crisis. Later, in a major crisis, it could be commanded to de-orbit, to saturate its attitude control system, or to exhaust its station-keeping fuel.

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3. Deploy cost-effective defensive countermeasures on US satellites and develop survivable, enduring wartime systems, whether they are to be kept in space or on earth. The cost of these prescriptions is considerable. Nevertheless, this cost must be borne to ensure the minimum command, control, communications, and intelligence capabilities necessary to successfully fight a future war.

4. Improve US space surveillance capabilities to preclude an ASAT surprise attack and to assist any US attacks. Current tracking depends on systems designed primarily for ICBM tracking. New systems are needed to handle the increased maneuverability of satellites and to track high-altitude satellites more reliably.

5. Work toward agreement on and implementation of effective ASAT arms control. The United States cannot disregard the difficult issues involved, but should at least begin the dialogue. The economic and security consequences of an ASAT arms race are serious for both the United States and the Soviet Union. Perhaps a rational agreement can be reached, with assurances for both superpowers.

These five recommendations are similar to those made by others. For example, the Aspen Study Group made the following six recommendations:

1. Expand satellite survivability measures.
2. Reduce reliance, wherever possible, on spacecraft that are inherently vulnerable.
3. Maintain capabilities to attack threatening Soviet satellites in low earth orbits.
4. Prevent "quick kill" threats to high altitude satellites.
5. Negotiate rules-of-the-road arrangements.
6. Improve our spacetracking and surveillance capabilities in space.<sup>13</sup>

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This group differentiated between the current threat posed by the operational Soviet ASAT to satellites in low earth orbit and the potential future threat to high-altitude satellites. In addition, their reference to rules-of-the-road arrangements seeks to set up conventions for rendezvous and close passage of satellites similar to rules of the seas. The Aspen Group did not rely heavily on arms control negotiation, although they did call for limits on numbers of ASATs and high-altitude capability. Perhaps the outlook for successful negotiations was even more grim in 1985 than it is today.

Similarly, the Commission on Integrated Long-Term Strategy in late 1987 outlined a strategy for space. It included a requirement for "the means to degrade Soviet satellites" and stated categorically, "In a war with the Soviet Union we cannot count on space being a sanctuary." The group quickly dismissed arms control because of the problems presented by residual capabilities of ICBMs and SLBMs. The commission's final recommendations in this area are these:

1. An improved surveillance and tracking system for space.
2. More distributed, survivable satellite systems including smaller, low-cost, austere satellites.
3. A wartime capability to replenish satellite constellations.
4. A more enduring and redundant satellite control system.
5. US ASAT capability to attack at all altitudes and to attack enemy ground elements.
6. Better adaptation of civilian satellite systems to military use.
7. Better education and training for space operators.
8. Exploration of the potential for self-defense zones around satellites, similar to zones around ships at sea.<sup>14</sup>

This group disregarded any potential for arms control. Its strategy is clearly focused on US space control.

Despite these more hawkish recommendations by two esteemed groups, the potential for verifiable,

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comprehensive arms control cannot be ignored. My analysis has shown that a true space sanctuary could continue to meet US needs. The economic benefits of this strategy as opposed to an attempt at US space control are considerable. Although the United States cannot afford to put all its eggs in the arms control basket, it cannot ignore the potential savings and security that effective ASAT arms control could bring.

### NOTES

1. Paul B. Stares, "Space and U.S. National Security," in *National Interest and the Military Use of Space*, ed. William J. Durch (Cambridge, MA: Ballinger Publishing Company, 1984), pp. 35-36.
2. Thomas C. Brandt, "The Military Uses of Space," in *America Plans for Space* (Washington DC: National Defense University Press, 1984), pp. 83-84.
3. Stares, "Space and U.S. National Security," p. 45.
4. Paul B. Stares, *Space and National Security* (Washington, DC: The Brookings Institution, 1987), p. 60.
5. R. Bulkeley and G. Spinardi, *Space Weapons: Deterrence or Delusion?* (Totowa, NJ: Barnes and Nobles Books, 1986), p. 17.
6. Paul B. Stares, *The Militarization of Space: U.S. Policy, 1945-1984* (Ithaca, NY: Cornell University Press, 1985), p. 119.
7. *Ibid.*, p. 123.
8. Colin S. Gray, *American Military Space Policy* (Cambridge, MA: Abt Books, 1983), pp. 79-80.
9. The Aspen Study Group reviewed ASAT policy in its 1985 review. The Aspen Study Group was co-chaired by William Perry (USDR&E in the Carter administration) and Brent Scowcroft (national security advisor under Presidents Ford and Bush). Other notable members in key positions include Dick Cheney (currently secretary of defense) and Sam Nunn and John Warner (chairman and minority leader, respectively, of the Senate Armed Services Committee). The Commission on Integrated Long-Term Strategy examined a broader subject than ASAT policy, but included ASAT recommendations in its final report, *Discriminate Deterrence*. The Commission was co-chaired by Fred C. Ikle and Albert Wohlstetter.
10. Stares, *The Militarization of Space*, pp. 255, 258. Stares presents several interesting tables and graphs on US expenditures. The total spending on space programs is derived from these tables.



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11. Although no belligerent attack on a satellite has been indisputably observed, there have been reports of jamming and laser blinding of space sensors. Confirmations of these reports and judgment of intent is not available in the literature.

12. Numerous other nations have satellites. The bulk of these are communication satellites. Following the United States and the Soviet Union, France possesses the most widely arrayed space capability.

13. *Anti-Satellite Weapons and U.S. Military Space Policy*, an Aspen Strategy Group Report (Lanham, MD: The Aspen Institute for Humanistic Studies and the University Press of America, 1986), pp. 34-38.

14. *Discriminate Deterrence*, Report of the Commission on Integrated Long-Term Strategy, January 1988, pp. 54-55.

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**CHINESE ARMS SALES  
AND US-CHINA  
MILITARY RELATIONS**

EDEN Y. WOON

**D**URING THE NINE-YEAR MILITARY RELATIONSHIP BETWEEN the People's Republic of China and the United States that was suspended in the wake of the Chinese government's violent suppression of the Democracy Movement in June 1989, that relationship was redefined several times. It moved from the "strategic alliance" expectations of the initial years, through the complete inactivity of the subsequent two years, to four years of steady development, and then one year of "minimum momentum." Each twist and turn was affected by events in the general bilateral relationship. Before the use of the People's Liberation Army (PLA) on 4 June 1989 in Tienanmen Square—the issue that most affected US-China relations was Chinese arms sales abroad. I contend that China, because of financial, geostrategic, and "big power" status reasons, will maintain its arms sales, thereby continuing certain conflicts of interest with the United States. Both countries, therefore—after a possible restoration of the military relationship—should be prepared to deal with these circumstances for some time to come.

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Lieutenant Colonel Eden Y. Woon, US Air Force, wrote this essay while studying at the National War College. The essay won recognition in the 1989 JCS Strategy Essay Competition, and was previously published, in slightly different form, in *Asian Survey* (vol. 29, no. 6, June 1989, pp. 601-18).

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### REVIEW OF THE MILITARY RELATIONSHIP

ON 6 JANUARY 1980, Secretary of Defense Harold Brown arrived in Beijing, marking the opening of defense contacts between the United States and the PRC. In the beginning, the Carter administration hoped to develop a "strategic alliance" with China against the Soviet Union. Indeed, Deng Xiaoping also had leanings in that direction. The world situation at the time—the relatively weaker defense posture of the United States vis-a-vis the Soviet Union, the Vietnamese invasion of Cambodia, the Sino-Vietnamese and Sino-Soviet conflicts, and the Soviet invasion of Afghanistan—reinforced the views of both sides.

Despite expectations, however, those early defense contacts remained extremely limited, certainly nowhere near a "strategic alliance." In fact, no sooner had they begun and the possible transfer of some nonlethal defense articles been discussed in a high-level Chinese defense visit in June 1980, than all military dialogue stopped, reflecting the general problematic bilateral relationship between China and the United States between 1981 and 1983. Irritants in the relationship followed one after another during those two years. In China's view, the two most serious ones were US arms sales to Taiwan and China's feeling that it was being discriminated against in US technology transfer policies. The first of these issues was addressed in August 1982 with the signing of the Taiwan arms sales communique in which the United States "appreciates the Chinese policy of striving for a peaceful resolution of the Taiwan question . . . and it intends to reduce gradually its sale of arms to Taiwan, leading over a period of time to a final resolution."<sup>1</sup> The second issue was settled in a positive way in China's eyes when Secretary of Commerce Malcolm Baldrige went to Beijing in May 1983 to inform the Chinese that China was being moved to a new, less restrictive category of

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technology transfer considerations in US trade regulations. Meanwhile, other irritants were being resolved by both sides, making the bilateral atmosphere suitable for a revival of defense contacts.

That revival took place in September 1983 when Secretary of Defense Caspar Weinberger paid his first visit to China and set in motion the now well-known "three pillars" approach taken by the United States in pursuit of an enduring military relationship with the PRC: high-level visits, functional-level exchanges, and military technology cooperation. The last came to mean US Foreign Military Sales (FMS) to China when China was granted FMS eligibility in June 1984. The military relationship grew steadily between 1983 and 1987, neither outstripping nor lagging behind the developing overall bilateral relationship. Many high-level defense visits took place in both directions across the Pacific; working-level contacts occurred in numerous fields—training, logistics, military education, quality assurance, systems analysis, military medicine. The two most visible working-level contacts were the US Navy port call at Qingdao in 1986 and the USAF Thunderbirds demonstration team's visit to Beijing in 1987. As for military technology cooperation, by 1987 four FMS programs were signed: the \$22 million large-caliber artillery plant modernization program, the \$8 million MK 46 Mod 2 torpedo sale, the \$62 million AN/TPQ-37 artillery-locating radar sale, and the \$500 million F-8 interceptor avionics modernization program. In addition, on the commercial side there were a limited number of military systems approved and sold to China, although they formed an extremely small percentage of all the potential deals discussed with the Chinese by US defense companies during these years.

Weinberger's second visit to Beijing in October 1986 contrasted sharply with his first visit in its warmth and wide-ranging substantive dialogue. The four years of steady development in US-China military relations

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culminated with the May 1987 visit to the United States of Yang Shangkun, vice-chairman of the Central Military Commission and later PRC president. Indeed, the military relationship appeared to be in a very healthy state in early summer of 1987.

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THE UNITED STATES began Persian Gulf escort operations for reflagged Kuwaiti tankers in July 1987. This operation, and the fact that Chinese HY-2 Silkworm antiship missiles posed a potentially serious danger to US naval vessels, brought into focus for both the government and the American public China's arms sales policy around the world, with the most urgent concern focusing on the Middle East. It turned out that the escort decision had a major effect on US-China relations, and this in turn had an effect on the military relationship.

China began its push to sell weapon systems abroad as early as the late 1970s. After years of providing arms free of charge, mostly to its three Asian buffer states (North Korea, North Vietnam, and Pakistan), the Chinese began sales in 1979. From ideological support of the Third World, carried to its height during the Mao era, China shifted to a business view of arms provision, encouraged by Deng Xiaoping's economic policies. Former African beneficiaries became less important, and with the beginning of the Iran-Iraq war in September 1980, China marched into the world arms sales market, quietly but in full force. The most striking statistic is that China, in the period from 1980 to 1987, ranked fifth in the world in the value of arms delivered to the Third World, behind only the Soviet Union, the United States, France, and the United Kingdom. That value is reported to be \$8.7 billion (1989 US dollars). The acceleration of China's arms business is evidenced by the fact that its deliveries

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actually ranked fourth in the period 1984-87, overtaking the UK, and the percentage increase of its sales from 1980-83 to 1984-87 far exceeds that of the other front-runners. In terms of arms sales agreements, from 1980 to 1987 China signed contracts with the Third World totaling \$11 billion, again ranking it fifth in the world.<sup>2</sup>

Where have all these arms being going? According to data published in 1988 by the US Arms Control and Disarmament Agency, 80 percent of China's arms deliveries in the period 1982-86 went to the Middle East.<sup>3</sup> This figure is confirmed for the period 1980-87 by a 1988 Congressional Research Service study, which identified Iran and Iraq as the principal Middle East arms customers for China. China signed arms agreements with Iraq worth \$3.6 billion in 1980-83 and \$1.5 billion in 1984-87, while selling Iran arms worth \$505 million in the earlier period and \$2.5 billion in the latter. In total, 74 percent of China's arms agreements from 1980 to 1987 were with Iran and Iraq. In the same 1980-87 period, among foreign providers China's share of arms agreements with Iraq and Iran amounted to 13 percent, compared with the Soviets' 29 percent, and Western Europe's 31 percent.<sup>4</sup> In addition, its sale of CSS-2 intermediate-range ballistic missiles (IRBMs) to Saudi Arabia earned for China as much as \$3 billion more.<sup>5</sup> That sale was revealed in March 1988 after the completion of the above cited US government studies and was not included in their statistics. The CSS-2 IRBM and the Silkworm missile are the most publicized of Chinese arms export items, but they only headline a variety of arms that China has sold abroad. The HY-2 Silkworm, which has been supplied to both Iran and Iraq, is an antiship missile modeled on the Soviet Styx family. It has a range of up to 50 miles and a warhead carrying up to 1,000 pounds of explosives. This system typifies those that arms customers of the Chinese find attractive, representing relatively low technology, easy maintenance and operation, and fairly low cost.

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(Considering that Chinese weapons are priced well below Western offerings, the dollar figures of Chinese arms sales quoted above imply a greater number of items sold than might at first be supposed.)

To Iran, China reportedly has also provided F-6 (Chinese MiG-19) fighters, Type-59 (Chinese T-54) tanks, a large number of field artillery pieces and shells (122mm and 130mm), multiple 107mm and 122mm rocket launchers, and surface-to-air missiles. There also were reports that China has signed for sale to Iran of C-801 antiship missiles (the Chinese version of the French Exocet) and perhaps some technological assistance for indigenous arms production. To Iraq, China has provided tanks, artillery, ammunition, the F-7 (Chinese MiG-21) fighter, the B-6 (Chinese Tu-16) bomber, and both surface- and air-launch versions of the Silkworm.<sup>6</sup>

Thus far, Saudi Arabia has purchased only the CSS-2 IRBM from China, a deal that apparently includes crew training and site preparation. The CSS-2 is a vintage 1960s liquid-fuel strategic missile used by the PLA as part of China's nuclear deterrent strategy. As an older system, it became a perfect item for sale to Saudi Arabia. The version sold to the Saudis reportedly has a range of 1,500 miles; although it can carry a nuclear warhead, the Chinese claimed that they transferred no such capability to Saudi Arabia.

Other than the Persian Gulf states, the most important Chinese arms customers are Egypt, Pakistan, and Thailand. In May 1981 China sold one submarine and one submarine chaser to Egypt, and since then Egypt has been purchasing weapons from China in large quantities (\$625 million in contracts from 1982 to 1986), including fighters and naval vessels. According to the agreements, China also supplied technicians to assemble F-7 aircraft in Egypt. Since replacement parts for much of Egypt's pre-1974 Soviet equipment became unavailable, Egypt found Chinese-modified Soviet model equipment suitable to replace its Soviet-made weapons.<sup>7</sup>

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Pakistan, perhaps China's closest ally, has been acquiring a variety of Chinese arms for some time. Pakistan has bought Chinese A-5 ground-attack aircraft, F-6 and F-7 fighters, and up to 1,100 Type-59 tanks, in addition to other types of artillery and munitions.<sup>8</sup> Two years ago, Pakistan seriously considered purchasing modified Chinese F-7s to supplement its F-16s and replace its aging F-6s. The modification would involve putting an advanced Western engine into the fuselage of a Chinese F-7 and upgrading the aircraft with modern radar. But Pakistan has up to now been reluctant to move forward, and is interested in buying additional F-16s from the United States. The Chinese most likely have been disappointed, not so much about missing out on the money that would have been earned from the sale of the F-7 body as about not determining the engineering feasibility of upgrading the F-7 in this manner—something in which the PLA Air Force would be interested for its own fighter inventory. Despite this temporary setback, it is clear that Pakistan continues to be a reliable customer of China.

Thailand is another close friend of China. Not until 1987, however, did Beijing conclude a major arms deal with the Thais. The deal included Type-69II (Chinese upgraded T-54) main battle tanks, 130mm Type-59 field guns and artillery shells, and 37mm twin antiaircraft automatic guns. These systems, worth \$77 million, were sold at "friendship prices," costing the Thais only \$10 million under very favorable payment terms. Deliveries began in September 1987.<sup>9</sup> Thus, China has gained a foothold in the Thai arms market heretofore dominated by US-made equipment. In addition to North Korea, Libya, Syria, and Bangladesh, China has other much smaller arms customers in the Middle East and Africa, and it has sold some firearms to the West; but no items transferred to these recipients are as significant as the ones described thus far.



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Beijing has been pushing a number of weapon systems besides those mentioned above, but so far has not been successful in marketing them. In fact, most projects involving Western technological improvements to Chinese weapons have not resulted in successful negotiations for sale. The weapon system that causes the most anxiety for the United States, and which has persistently figured in sales rumors, is the Chinese M-family of short-range ballistic missiles (SRBMs). In June 1988 US officials expressed concern that the Chinese might be negotiating sales of the M-9, a missile with a range of 375 miles, to Syria. The M-9, although not yet ready for delivery, has long been marketed by China in international arms trade shows.<sup>10</sup>

Thus, despite some failures in marketing, China has become a reliable and aggressive supplier in the international arms market. However, it still needs to expand its customer base. With the cease-fire in the Iran-Iraq war, demands by Iran and Iraq for Chinese weapons may continue but will probably be lower. Since these two countries have been China's biggest arms customers for the past eight years, Beijing will want to replace its losses. Many Chinese officials have traveled to South America, hoping to break into that market, but, except for a satellite launch contract with Brazil concluded in the summer of 1988, no arms contracts have been reported. Besides, Brazil itself is an aspiring arms provider, so inroads into Latin America may not be easy.

Chinese arms marketing efforts are headed by a number of import-export organizations, with each industrial ministry that produces weapons having its own sales companies. For example, the Ministry of Astronautics and Aeronautics, which makes fighters and missiles, has the Great Wall Company, the China Precision Machinery Import-Export Company, and the China Aero-Technology Import-Export Company. The Ministry of Machine Building, which makes tanks and artillery, has

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the North China Industries Company and others. Xinshidai represents the National Defense Science, Technology, and Industry Commission, and has discussed arms sales on behalf of the production ministries. Poly Technologies Company represents the PLA General Staff Department, selling from the PLA inventory.

To understand Chinese motivations for arms sales, one must understand this diffuse sales effort and the competition within the Chinese system, which contribute to the difficulty China has had in managing its arms sales abroad.

## MOTIVATIONS FOR ARMS SALES

ALTHOUGH ARMS SALES by China have gone on throughout the 1980s, and piecemeal justifications for them have been given by Chinese officials, it was not until September 1988 that China formally proclaimed its "three principles of arms sales." According to a Ministry of Foreign Affairs (MFA) spokesman,

China is a responsible country. We always assume a serious, prudent, and responsible attitude toward the military products export question. In this regard, we strictly adhere to three principles: First, our military products export should help strengthen the legitimate self-defense capability of the countries concerned; second, it should help safeguard and promote peace, security, and stability in the regions concerned; and third, we do not use the military sale to interfere in the internal affairs of other nations.<sup>11</sup>

When China first started selling arms, it is doubtful that these principles were yet being formulated or that the MFA exercised much control over arms exports. The initial and still predominant factor motivating China's

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desire to export arms abroad was the need for foreign exchange. Soon after the Third Plenum of the Eleventh Party Congress in December 1978, it became clear that China's industrial production ministries were to expect a gradual reduction in financial support from the central government and more responsibility for funding their own operations. One step in this direction was the separation of "enterprises" (factories) from "management" (the ministerial organization staff). The enterprises, then, were exhorted by the central government and the ministries to seek ways to increase their earnings.

Factories that traditionally had been producing defense items adopted two methods to enhance their revenue. One was to convert excess capacity to production of civilian goods, which were then sold on domestic and foreign markets; the other was to sell to the international market whatever defense items were beyond the quota provided to the PLA. In either case, the earnings went to the parent production ministry—for housing, worker benefits, salary increases, capital investment, expansion of marketing, and research and development—and to the central government. The following years saw a profusion of competing import-export companies. The search for always-scarce foreign exchange was no longer centralized and a near-chaotic market situation developed. It was then that the industrial ministries saw the Iran-Iraq war as offering a good opportunity for their pursuit of the foreign dollar. Poly Technologies was unique in that a majority of its earnings from export sales would go back to the PLA. Staffed by many relatives of senior Chinese leaders, this company became an aggressive exporter—and importer—of weapon systems.

In effect, Poly Technologies and the other Chinese import-export companies have succeeded in supplementing China's defense budget. Defense modernization is last in priority in Deng's proclaimed "Four Modernizations" for China, and the portion of annual Chinese gross

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national income devoted to defense fell from 12 percent a decade ago to only 5 percent in 1987.<sup>12</sup> Production in greater volume for arms sales abroad can reduce unit costs, and, more important, the foreign exchange earned has allowed China to purchase foreign military technology and equipment and to engage in research and development as well as production for its own defense. These sales may have generated some of the foreign exchange to pay for the F-8 avionics FMS program and for other costly foreign defense purchases.

Selling arms abroad became an acceptable, relatively easy, and lucrative way to help finance China's defense modernization. Until recently, there was little dispute in China as to the correctness of this seemingly "all-win" arms sales policy. Senior PLA leaders, still politically powerful, were less dissatisfied with the last-place priority of defense spending in China's central budget allocation, knowing that Deng Xiaoping had allowed this other avenue for the PLA to help fund its modernization. This policy had solid domestic support, and it worked very well without fanfare until the summer of 1987, when China's arms sales to the Gulf war belligerents suddenly became an international political issue. The Foreign Affairs Ministry was thrust onto center stage to explain the arms sales policy, initially denying that any such sales to either Iran or Iraq had ever taken place. In the face of mounting accusations in the press, China retreated to the position that "some Chinese-made arms may have made their way to the Persian Gulf through the complicated international arms market." Meanwhile, China was critical of the US escort operation in the Persian Gulf, calling it "destabilizing."<sup>13</sup>

Before this time, China may have had a genuine geostrategic justification for its arms sales, but it is probably only very recently that this justification became well developed. From Beijing's point of view, geostrategy is a legitimate justification. China has long seen the United

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States, the Soviet Union, and others use arms sales as an instrument of foreign policy, and Chinese policymakers surely have read the US Security Assistance Manual, which says,

As an instrument of (US) foreign policy, security assistance helps our friends and allies to provide for their own defense, thus deterring possible aggression. It is tangible evidence of our support for the independence and territorial integrity of friendly countries, especially those whose continued survival constitutes a basic objective of our foreign policy.<sup>14</sup>

By expanding its relations with new arms sales customers, China has achieved foreign policy successes with many of them. Saudi Arabia has been one of the staunchest anticommunist countries in the world and is among the most important remaining states to maintain diplomatic ties with Taiwan. With the CSS-2 sale, China and Saudi Arabia have developed a closeness that could not have been predicted a few years ago. They stood firm against outside criticism—mostly from the United States—upon revelation of the CSS-2 sale, and in November 1988 the two countries signed a memorandum of understanding for setting up “commercial representative offices” in each other’s capitals. Although diplomatic recognition still may be a few years off, this opening to Saudi Arabia, with the CSS-2 sale as a catalyst, ranks as a major foreign policy triumph for China in the 1980s.

In addition, China now enjoys more favorable relations with both Iran and Iraq than does the United States. Iraq, as a Soviet client, was China’s initial Persian Gulf customer. Believing that Iran occupied a more strategic position with respect to the Soviet Union’s “southward strategy,” Beijing shifted its arms sales emphasis to Iran in recent years. It has managed not to alienate either side while continuously supplying arms to both. All through

the Gulf war, China maintained a dialogue with both parties. It claimed it exerted a moderating influence on Tehran, trying to get it to accept UN Resolution 598 for a cease-fire. Now that there is a cease-fire, and since no Silkworm was fired at US naval vessels in the Gulf by Iran, China views itself as a political winner on this issue.

The arms sales to Pakistan and Thailand also have definite geostrategic motivations. In the case of Pakistan, these motivations derived not only from Pakistani assistance to Afghan guerrillas fighting Soviet forces but also from Pakistan's hostility toward India—a not-so-friendly neighbor of China. Thailand's growing political friendship with China had more to do with Chinese sales to Thailand, which have been offered on extremely favorable terms. China also supports Thailand because of Thai support for Cambodian resistance activities against China's arch enemy, Vietnam. Hence, in almost every instance, China has geostrategic motivations of its own for its arms sales, and it has been quite successful in extracting political gains from this monetary program.

The principal difficulty in this undertaking has been the necessity to defuse objections by two of China's most important technology providers—Israel and the United States. Although the press continues to report Israeli military technology assistance to China—*The Los Angeles Times* estimated that Israel in recent years has sold China military equipment and know-how valued at \$1 billion<sup>15</sup>—the entire relationship is shrouded in secrecy; and since China continues to side with the Arabs against Israel in public, it is difficult to discern what kind of dialogue the two countries have had on Chinese Middle East arms sales, especially the CSS-2 sale and the rumored M-9 negotiations with Syria. Publicly, Israel's concerns and comments have been directed at the recipients or potential recipients only, including a threat in March 1988 of preemptive strikes against Saudi Arabia's CSS-2 sites.<sup>16</sup> If the extent of Israeli financial involvement

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with China is true, Israel may be reluctant to exert much pressure on Beijing—especially since it continues to hope for diplomatic relations with China.

Other than financial and geostrategic reasons, China may engage in arms sales to assert its desire for prestige or "big power" status. The international arms trade shows are dominated by US and West European suppliers, but China began to attend the Paris Air Show in 1985 and held its own defense equipment show in 1986. Beijing believes there is every legitimate reason for China to enter the arms market, and that criticism of Chinese arms sales has occurred only as China has begun to cut into the percentage share of these traditional suppliers. Former Chinese Foreign Minister Wu Xueqian complained, "whenever China sells weapons, China becomes the newsmaker. How about the weapons flying over the Gulf? There are many kinds of them ... these are not Chinese weapons. Why is it that some people always harass China with this so-called issue?"<sup>17</sup>

Even though it promises not to transfer nuclear weapons, China has refused to sign the Nuclear Non-proliferation Treaty, charging that this is an agreement among the nuclear powers to prevent smaller countries from achieving the same political and military status. Chinese officials believe that criticism of China's arms sales stems from the same superpower mentality, and ask, "Why are you so critical of our arms sales when you have sold weapons of much more lethality and advanced technology to many more clients around the world?"<sup>18</sup> In other words, China believes that it has a sovereign right to sell arms to whomever it judges to be appropriate, and it resents outside criticism. The "three principles of arms sales" can be construed as a veiled warning to others to mind their own business on this issue.

Looking at the Chinese *modus operandi*, it is evident that China often compartmentalizes its arms sales, and it wants other nations to accept this thinking. For example,

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Iraq is supposed to look the other way when its enemy is supplied by China; Iran is expected to do the same; Saudi Arabia is to ignore Chinese sales to Iran and secret dealings with Israel; Israel is to do the same while China sells to Saudi Arabia and negotiates with Syria. China sees the superpowers frequently selling to different sides, including one such instance on its own doorstep—the United States selling arms to both Taiwan and the PRC. In the past few years, China has placed the thorny issue of arms sales to Taiwan in the background as it pursues its beneficial relationship with the United States. One Chinese official said he did not understand why the United States would allow the Chinese Middle East arms sales to sour the entire, important bilateral relationship, claiming that if the roles were reversed China would not let that happen.<sup>19</sup>

## EFFECTS ON US-CHINA MILITARY RELATIONS

THE FRUSTRATION LEVEL at the Pentagon in the latter half of 1987 rose steadily as the Chinese continued to avoid the Silkworm issue. Chinese officials, whether from the MFA or the PLA, publicly denied that China had ever provided Silkworms to Iran. In fact, they denied ever selling any arms to either of the Persian Gulf war participants. This lack of candor, compounded by speculations about Chinese Silkworm sales and deliveries to Iran and anxiety about the safety of US naval vessels in the Gulf escort operation, eroded the earlier goodwill toward China felt by many in the US defense establishment. Some officials even questioned the basic worth of a military relationship with China. The frustration was by no means limited to the military; it extended to other US government agencies, the press, and most notably the Congress. The result, then, was a gradual deceleration of the pace in the military relationship that was not to be reversed until the summer of 1988.



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Other incidents, largely outside of the military relationship, caused the strain to continue. In September 1987, riots in Tibet caused the Congress to issue statements that the Chinese considered interference in their domestic affairs. In October the State Department announced the decision to suspend additional liberalization of high-technology transfers to China, explaining that, because of "rising tensions in the Persian Gulf, . . . we consider this an inappropriate time to proceed with our review of further export control liberalization."<sup>20</sup> That statement immediately brought a reaction from Xinhua news agency: "It is known to all that the current strain in the Gulf area is caused by the sustaining and escalating Iran-Iraq War and further intensified by the military involvement of the big powers there. . . . In fact, the liberalization of high-tech export controls on China has nothing to do with the situation in the (Persian) Gulf area."<sup>21</sup>

While all of this was going on, news headlines focused on the warming US-Soviet relationship, culminating in General Secretary Gorbachev's visit to Washington in December 1987. Privately, some Chinese wondered whether US friendliness toward the Soviet Union meant that China was less important in US foreign policy and that the "China card" no longer needed to be "played." Publicly, China went on the counterattack. The late Huan Xiang, former director of China's Center for International Studies, writing in the authoritative *Beijing Review*, observed, "over the past year or so a succession of unpleasant incidents has led to disputes which have introduced some instability in Sino-US relations." He then outlined six problems between the two countries, including American sanctions for what the Reagan administration charged were Chinese arms sales to Iran, Washington's continued arms sales to Taiwan, and congressional resolutions criticizing China's handling of demonstrations in Tibet. He wrote, "The six problems

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amount to nothing short of interference in China's internal affairs and political blackmail. They are a blatant demonstration of hegemonism and represent a threat to stable Sino-US relations."<sup>22</sup>

US reactions to the main issue of Silkworm missiles were perceived by China to be uncoordinated and unfair, resulting in China's strong rhetoric. Then in March 1988 both countries took steps to reinvigorate the bilateral relationship. The State Department announced it was lifting the freeze on liberalization of high-technology exports to China, and Reagan administration officials said China had given assurances that it would take steps to stop delivery of Silkworms to Iran. Foreign Minister Wu Xueqian had a successful and cordial visit to Washington in March 1988, and China pledged to support the UN effort to get Iran to accept UN Resolution 598—if a majority of the Security Council agreed to the idea. It appeared that both countries agreed with a Reagan official's observation, "we wanted to get [US-China relations] out of this stall, to get things moving again."<sup>23</sup> The optimism was short-lived, however, as the Chinese sale of CSS-2 IRBMs was soon revealed.

The CSS-2 sales to Saudi Arabia did not cause as visceral a feeling among the US military as did the Silkworm issue, which directly threatened American lives. To many who did not trust China because of the Silkworm question, however, the sales to Saudi Arabia provided further proof that the Chinese arms sales policy was in conflict with US interests. These individuals argued that no country had ever transferred a missile with such a range and that, although China did not transfer nuclear warheads, there was no guarantee that Saudi Arabia could not obtain them—or chemical warheads—elsewhere. A severe Israeli reaction was also feared. In short, there was a belief that the CSS-2 sale was highly destabilizing and symptomatic of an irresponsible Chinese attitude. The US government concerns were conveyed officially to the

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Chinese, whose reactions were predictably defensive. They accused the United States of trying to dictate to whom China can sell arms while the United States itself transfers far more advanced weapons around the world. Not only did China claim not to have sold nuclear warheads, but Wu Xueqian said, "the Saudi government has made a commitment to us of no transfer, no first use, and to use these missiles entirely for defensive purposes."<sup>24</sup> Neither Saudi Arabia nor China backed off from this contract, and Israel did not take any action. Although US demarches were rebuffed by both Riyadh and Beijing and the issue was temporarily shelved, it pointed to the increasing number of diverging interests between the United States and China caused by the latter's arms sales policy. Then came press reports that China was negotiating for sale of its M-family of SRBMs.

By early summer of 1988, both governments came to realize that there had to be some fundamental discussions on Chinese arms sales policy in general and missile sales in particular. This realization resulted in the matter being placed high on the agenda for two important visits to Beijing—by Secretary of State George Shultz in July and Secretary of Defense Frank Carlucci in September. Shultz said after his visit, "the Chinese told me that they had not made any sale of ballistic missiles to a country other than Saudi Arabia.... As for ballistic missiles in general, we didn't come to any agreement about it, but I think it has been worthwhile to talk about it, and I am sure that the subject will continue to be an important one on our agenda." Carlucci, visiting two months later, said he was told by the Chinese that their future sales "will be very prudent and very serious.... We are certain that the Chinese will behave in a responsible way in the future. ... I am totally satisfied with these discussions, and I am hopeful that as a result, we can put this issue behind us."<sup>25</sup> It was during Carlucci's visit that the Chinese announced their "three principles of arms sales." The

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military relationship now began to regain momentum slowly. Several high-level visits were conducted in the fall of 1988, and the cease-fire in the Iran-Iraq war certainly contributed to removal of the Silkworm issue as a concern of the US military. The question now is whether Chinese arms sales any longer pose problems that could affect the military relationship between the two countries.

## FUTURE PROSPECTS

THE MILITARY RELATIONSHIP between the United States and the PRC was suspended by President Bush on 5 June 1989. Any restoration of it will depend upon the state of the general bilateral relationship. In the past nine years, the Chinese have never let the military relationship go ahead without first resolving bilateral problems. Some US observers have argued that there have always been natural limitations to the military relationship.<sup>26</sup> If Chinese arms sales continue, and if they contribute to a Chinese foreign policy that is at odds with US interests in critical areas, the entire relationship and the progress of defense contacts—assuming their eventual resumption—will be affected. Having become a leading supplier in the world arms market, China will not now draw back but will intensify its marketing efforts, especially to recoup losses resulting from the cease-fire in the Persian Gulf war. There are compelling reasons—of finance, strategy, and prestige—for China to continue the sales, and they will be championed by many influential Chinese military leaders, who want to see this source of military revenue enhancement continue and will react sharply to any outside concern by reiterating that its arms sales program is a matter of sovereignty.

The United States has acknowledged that China has a right to make these decisions, but it reserves the right

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to express its concern when US interests are threatened. During the Carlucci visit to China, an American official said, "the U.S. recognizes China's right to have an overseas arms sales program just as the U.S. does."<sup>27</sup> Any American behavior that would indicate this understanding was in dispute would be counterproductive. The problem for the United States is how to convince the Chinese that this is indeed the US understanding, while at the same time engaging them in an exchange of views on the issue of arms sales. The Chinese also need to feel that US concerns regarding arms sales to the Third World are not solely directed at China—in other words, that China is not being "picked on," as many of its leaders believe.

The first task for Washington is to persuade the Chinese that missiles fall into a special category of weapons to be transferred on the world market. Much progress was made in the months after the revelation of the Saudi CSS-2 purchase, and Beijing became willing to enter at least a limited dialogue on this especially sensitive category of weapons. The United States is most concerned about the possibility of combining chemical warheads with ballistic missiles. Secretary Shultz said in San Francisco in October 1988, "The worst nightmare of all would be the eventual combination of ballistic missiles and chemical weapons in the hands of governments with terrorist histories. . . . These weapons increase the potential for devastation in unstable regions of the Third World. And the conflicts themselves may be far more difficult to contain or isolate."<sup>28</sup> His concern appears to be shared by China. Some analysts say that the Chinese believe a treaty to ban chemical weapons is a more attainable goal than an agreement on nuclear or conventional arms. Beijing, therefore, has been active in helping to push through a convention based on the 1925 Geneva Protocol to ban comprehensively the development, production, stockpiling, acquisition, transfer, and use of chemical warfare

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agents, and the destruction of existing production facilities including dual-purpose plants.<sup>29</sup>

Many Chinese weapons may not be advanced enough to meet the more sophisticated customer demands, but missiles are an extremely attractive category of sale for China because it still has a virtual monopoly as a reliable supplier to the Third World of a more than adequate product. Therefore, this first task will not be easy for Washington. It may be that China will never sign the Missile Technology Control Regime (MTCR) for the same reason that it did not sign the Non-proliferation Treaty. This does not mean, however, that there should be no effort to discuss the purpose and terms of the MTCR; as is often the case with the Chinese, if they see the matter as in their own interest, they may very well come to agree with some principles without conceding that they have done so.

It is also quite possible that when the sale to Saudi Arabia was first contemplated and when the M-family of SRBMs was put into development, China could not foresee the criticism this issue would generate. Statements from Chinese saying they do not understand the concern with missiles when there are much more sophisticated weapons being sold to the Third World by Western nations may be largely true. Furthermore, China's management of arms sales, with foreign policy implications now fully considered, may lead to more cautious activity in the future.

The second task for the United States can be even more difficult than the first. Certain of China's customers are considered by the United States to be highly unstable and capable of irresponsible arms use. Since China's foreign policy interests may diverge from those of the United States, there may not be any agreement, except in the most obvious cases, on what constitutes "unstable and irresponsible" customers. For example, China has already sold arms to Iran, Libya, and North

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Korea—countries hardly considered responsible by the United States. Compounding the difficulty, the United States may even react against sales to a customer it deems “reasonable,” such as Saudi Arabia or Pakistan, if the items transferred, such as missiles, are perceived to be destabilizing. China would not tolerate any agreed-to list of suitable customers and weapons; delicate, patient diplomacy in discussions is needed rather than insistence or demands. China’s “three principles of arms sales,” if actually adhered to, would be a helpful starting point, even though the Chinese definition of the principles may well differ from Washington’s.

Along with sensitive diplomatic efforts, two other factors could be important in working toward improved US-China relations. One is a multilateral approach to the issue of missile proliferation. Expressions of concern from other Western nations would be of great help, as would any dialogue between Israel and China. Agreement between the Soviet Union and the United States on the dangers of missile proliferation and on responsible transfer parameters within this category of weapons would be a positive development, provided that China does not view it once again as superpower collusion. An independent approach to China by the USSR also would be useful. One of the long-standing US goals in developing a friendly relationship with China has been to see China become a full and constructive participant in the world community. If missile proliferation can be made not just a bilateral but an international issue with a united front of opinion, China would be more likely to see nonproliferation as in its own interest.

The other factor pertains more specifically to the state of China-US bilateral relations, particularly military relations. China is fully aware of the seriousness of the arms sales issue as an irritant; the various congressional resolutions—several dealing with military technology transfer—have alerted China to the still-fragile nature of

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the military relationship. Beijing must be facing the sobering thought that long-time opponents in Congress of US-China military relations now have gained new allies. As can be seen from the more forthcoming behavior of the Chinese military since March 1988, the PLA does value its relationship with the American military, and while continuing it along more or less present lines may be feasible, China will most likely be interested in breaking out of the established mode and developing the relationship.

Specifically, China has seen the worth of functional-level exchanges in modernizing the PLA infrastructure, and it also may be interested very soon in some additional military technology transfers from the United States. The four current FMS programs have been proceeding satisfactorily even though there have been problems in each program, mainly due to the newness of this type of defense contact and to the complexity of some of the agreements. By and large, the Chinese military appears to be pleased with US technical efforts and governmental support. The PLA continues to require modernization, not just in training, logistics, and other support areas, but also in hardware. In areas like aircraft engines and radar electronics, the most suitable provider of technology is the United States. It is inconceivable that the four current FMS programs are the only areas in which the PLA desires US assistance, and China's military leaders, who have a great deal to say about arms sales policy, must realize other aid could be useful.

Since relations were established a decade ago, China has acquired a much more sophisticated understanding of how the US government operates, including the role of Congress. The congressional resolutions and the fact that the recent satellite-launch case encountered some resistance in Congress were not lost on the Chinese. In the latter instance, a connection was drawn during an open hearing between the application for China to launch a



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US-made commercial satellite and the missile proliferation issue, and China should have gained a realistic appreciation of how hard the Reagan administration had to work for congressional approval in the satellite case. China undoubtedly realizes that any future military technology program would encounter close scrutiny, and positive movement on the arms sales issue would have an effect on both the administration and Congress.

In addition, US-China military relations are unlikely to move ahead of bilateral relations. There would be resistance again within the US defense establishment to military programs and exchanges if the Chinese arms sales issue re-exploded onto the front pages. Given recent experience, it can be assumed that future programs will receive close attention to see whether they legitimately contribute to China's defense but do not contribute specifically to its arms export industry. Additionally, despite official US statements welcoming Chinese rapprochement with the Soviet Union, that relationship will also be watched closely by some US military officials whose reactions quite possibly may differ from official US positions.

The shocking events in Beijing in June 1989 had a tumultuous effect in China and caused a severe strain in US-China relations. This essay presupposes that conditions both in China and in the bilateral relationship would soon be able to return to "normal." This is a huge assumption. But if the assumption is realized sometime in the near future, and if there is a mutual desire to restart the military relationship, the problem of Chinese arms sales abroad will occupy a prominent position once again as a potential irritant.

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6

## STRATEGIC DEFENSE AT REDUCED COST

*TOM CARHART*

THE STRATEGIC DEFENSE INITIATIVE ORGANIZATION HAS captured a lot of public attention since its inception several years ago, and rightfully so, for its task is formidable. In keeping with President Reagan's charge, it is investigating ways in which to effectively defend against a hostile attack upon the United States and its military forces by ballistic missiles—an attack against which the country presently has no defense.

Although the political ramifications of deploying a strategic defense system remain unsettled, deployment of some such system may indeed take place. The major diminution in the late 1980s of the strategic threat from Soviet ICBM forces does not decrease the likelihood of deployment. The likelihood is actually greater now because the rapid spread of technological advances has resulted in a new threat, a threat far more realistic and dangerous than the Soviet strategic threat has ever been: the danger of surprise attack by a small number of missiles against a small number of targets in the United States, launched by individuals who may or may not be openly identified as active agents of a Third World government.

Americans should remember uncomfortably that large groups of people in the Third World still consider

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Tom Carhart, of the Army Staff's Program Analysis & Evaluation Directorate, wrote this essay while an Adjunct Fellow with the Research Directorate, Institute for National Strategic Studies, National Defense University.

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the United States "the Great Satan," often for reasons based on religious beliefs. Whether such religious beliefs are a sound basis for that outlook is entirely irrelevant, for those beliefs have incited many individuals to sacrifice their lives in supposed martyrdom to achieve the political goals of their religious leaders. Given the fact that in 1989 Iraq tested a missile capable of attaining earth orbit—which is all you need in the way of lift capability to reach any proposed target anywhere in the world—and that other Third World nations are now believed to have a similar capability, Americans should be even more committed to building an effective strategic defense system with which to protect the continental United States from hostile missile attack.

The response that no Third World nation would dare launch an attack against the United States, deterred by the certainty that America would obliterate the perpetrator of such an attack, is no response at all. It is only a betrayal of the sort of cultural hubris that has brought about America's failure on the military front too many times.

After the major Union defeat at Fredericksburg during the American Civil War, for instance, General Hooker launched an invasion of Virginia's "Wilderness" territory with a force much larger than General Lee's rebel forces. Hooker was convinced that Lee, supposedly still pinned down near Fredericksburg by a smaller Federal force left there for that purpose, would wait quietly and allow Hooker's gigantic invasion force to roll up his flank and destroy the Confederate army. Hooker crowed this belief to all who would hear him, boasting that all military principles assured him that his bold stroke placed the Army of Northern Virginia within his grasp. He assured President Lincoln that he was certain to capture or destroy the entire Army of Northern Virginia within 48 hours of his attack.

In the event, however, Lee sent Stonewall Jackson with a large Confederate force on a circuitous forced

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march that allowed the Confederates to flank Hooker, roll up *his* lines, and rout *his* troops with a crushing blow at Chancellorsville, in what is remembered as one of the greatest Confederate victories of the Civil War.

Lee and Hooker, of course, were not only from the same cultures; their military training, upon which both relied throughout the war, was acquired at the same US Military Academy at West Point. They had learned from the same books, had drilled in the same US Army for twenty years before the war. No wonder Hooker was "certain" of how Lee would react.

The people who laugh at the notion of a Third World attack on the United States because of the certain doom it would mean for the attackers obviously studied from the same great books as those men who guided America's political steps through Vietnam with reasoned advice: "Don't worry, boys. If they don't surrender soon, we'll just bomb more targets until they do. They can't hold on much longer, they're only lesser people of the Third World. We'll have this little mess wrapped up in no time."

Given the rapid diminution of the military menace from the Soviet Union, and the natural parallel desire of US political leaders to redirect military expenditures to domestic needs, it is often difficult for those leaders to accept this emerging threat. But even without the thaw in the Cold War, the prospect of a Strategic Defense System would continue to be at great risk on Capitol Hill because of cost alone. The latest "sure thing" the Strategic Defense Initiative Organization has come up with is called "Brilliant Pebbles"—a large number of orbiting weapon systems that would truly launch the United States (like it or not) into a Policeman of the World mode, and would cost—according to SDIO's *low* estimate—something on the order of \$50 to \$100 billion.

Believing that the United States needs, more than ever, some limited system able to defend the continental

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United States against an accidental launch, a madman, or an unpredictable attack by an unknown assailant—an attack almost certainly made by a limited number of missiles, not one involving thousands of incoming warheads—I would like to propose such a system, an alternative much less expensive than current SDIO plans. First of all, I think it important to think “from scratch,” discarding many existing ideas and addressing the basic need of defense.

Any defense against a ballistic missile must first detect then track and kill the missile. Present research includes the use of ground-based missiles as killers, but much of the responsibility for detection and tracking would fall to what is known as the Airborne Optical Adjunct, or AOA.

The AOA, as it is presently being considered, consists of a modified Boeing 767 with an 85-foot pod atop the fuselage, the pod filled with complex computers and sensors. This pod has two openings several feet square on one side only, through which a sensor would be directed to detect and track incoming enemy warheads. When needed, the AOA would fly an irregular pattern at high altitude, attempting to cover a given area to detect incoming enemy missile warheads within that area.

The AOA program was launched in July 1984, with the government promising by contract to pay Boeing \$289 million before completion in 1991. The contract has since been renegotiated, with a new price tag of \$383 million. Cost overruns are expected to continue, and officials have estimated that the final bill will be around \$500 million. Boeing has charged the government some \$35 million for modifications to the single aircraft it is using for AOA test purposes. Let us presume that the AOA’s sensors and associated computers and other equipment are adequate to perform the required mission. But let’s not assume the modified Boeing jet is the one solution to the problem. Perhaps we should reevaluate what is needed as a platform, or simply restate the problem.

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In the late 1940s, when the RAND corporation came into existence as a think tank for the Air Force, one of the first problems it addressed was the Air Force's question of how and where to build refueling bases so that intercontinental bombers taking off from the continental United States could reach targets beyond their normal range. Dr. Albert Wohlstetter, one of the original scientists at RAND, restated the problem as, How do we refuel aircraft for intercontinental missions? Thus restated, the problem was much different, and so was born the concept of air-to-air refueling, which we very much take for granted today.

In a similar vein, I would restate the AOA problem. The United States should not ask, How do we design a large jet aircraft so as to accommodate sensors and associated equipment that will allow us to implement a timely monitoring capability on our borders? Rather, the question should be, How can we build a reliable set of watchtowers in the sky? Again, when the problem is so restated, new concepts emerge.

It seems quite evident that some qualities are essential. One of these is complete coverage when needed, with no holes where two AOA aircraft flying connecting routes get their orders or timing confused. A second is steady-state operation rather than just on-call emergency use. Constant operation is crucial given the *maskirovka* acts of political deception that are the single textbook-essential component of any Soviet act of war, and, probably, of acts of war by Soviet-trained or -affected Third World forces. And given crew, fuel, and maintenance costs, the United States can't efficiently keep those airplanes flying indefinitely. Peace lasts much longer than war. An effective system of watchtowers in the sky would spend most of its time guarding against a war rather than fighting one. And, third, cost must be within some reasonable limit. Unfortunately, any deployed ground-based strategic defense system as presently



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envisioned would require a sizable fleet of expensive AOA aircraft.

I have an idea that could provide these three desiderata bountifully. It involves the use of, for lack of a better term, a blimp. I do not mean something enormous and made of metal, like the Goodyear blimp. Rather, I anticipate something dramatically smaller, made of a lightweight, rigid, non-metallic, man-made material like Mylar that would be nearly invisible to radar. It is important for navigational reasons that it be a rigid, aerodynamic body without sharp edges, enclosing a number of helium balloons, rather than just a simple, naked balloon. Its position will have to be adjusted to keep it rather precisely on station despite winds.

We regularly send weather balloons to altitudes above 100,000 feet. Why couldn't we balance the weight of what I will call a "sentry platform" and the amount of helium with which it is filled so as to cause it to remain at a desired altitude?

I propose that the sentry platform contain just the sensor, that the associated computers and other equipment be located in a (perhaps hardened) site on the ground, and that what the sensor picks up be beamed down to that base below, much like television signals beamed down from satellites. Perhaps one such base could serve numerous sentry platforms, providing more cost savings.

I further propose that each sentry platform be stationed at an altitude of around 80,000 feet, some fifteen miles up. Ambient winds at that altitude, as we know from SR-71 flights, average around one or two miles per hour. The altitude could be varied up or down to accommodate mission performance and complicate possible enemy attacks. The platforms would need to stay above 45,000 feet, however, since weather and high winds end at about that altitude.

Since the platform would be stationed above clouds, every day would be completely sunny. Consequently, I

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would cover the top surface of each platform with non-metallic solar power cells. The power collected by these cells should be more than enough to power the sensor and send its data to the ground below. The actual size of each platform might in fact depend on the physical area required for solar collection cells and power storage capacity sufficient to meet power needs during both day and night.

The solar power collected could also be used to power a small electric motor that would, on command, drive one or two large, plastic-bladed propellers to keep the platform in the correct position relative to its base below. The propellers could be controlled by radio from the ground or by on-board computer. If one of these unmanned platforms failed to respond to radio controls and began to drift out of position, another radio signal could "pull the plug" on one of the several plastic balloons inside the craft, thus releasing perhaps one-fourth of the helium required to keep it aloft and allowing it to drift slowly to the ground. And if that failed, perhaps the platform could just be written off and allowed to drift away. Containing only the sensor and data link equipment, one of these platforms would not be a crucial loss.

When on station, the sensor would protrude from the top or bottom of the sentry platform and either remain in a fixed position facing the area of threat or rotate constantly, scanning an entire 360-degree arc. These sentry platforms would become the United States' watchtowers in the sky, always there, always watching, running on solar power, requiring little if any periodic maintenance.

This proposed system seems reasonably to offer improvements in steady-state, complete coverage by missile-detecting sensors. But the real kicker is cost.

Again, let's assume that the sensors and associated equipment now being considered by the SDIG are

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adequate for the job and would be required whether in an airplane or a sentry platform. Given the \$35 million in aircraft modifications mentioned earlier, an estimate of \$50 million for the cost of each AOA aircraft is probably on the low side. But for a sentry platform made of Mylar, some 20, 30, or even 50 feet long, containing three or four plastic bags filled with helium and carrying a bank of solar power collectors, I would be surprised if the cost would even reach \$50,000. Thus, for the price of *one airplane*, the country could perhaps obtain *one thousand sentry platforms* that would provide longer (open-ended, really, rather than limited by a ten- or twelve-hour flight), better (since their position relative to their base would be exactly known all the time, ensuring a good data link, and they would not have "blind spots" that an airplane-carried system would have), and vastly cheaper early-warning sentinel service.

Actual savings, of course, would depend on how many sentry platforms versus AOA aircraft we might need. Depending on the power of the sensors, perhaps as many as 500 such platforms would be needed to encircle the entire continental United States, at a total cost (based on my estimate above) of \$25 million. But in case my estimates are too conservative (though probably far fewer than 500 platforms would actually be required), let's make it \$50 million—the estimated cost of one AOA airplane. So the initial cost for a complete ring of sentry platforms would seem dramatically less than the cost of a fleet of airplanes that would presumably only guard the northern US frontier. In addition, fuel and maintenance costs for the platforms, given solar power above 50,000 feet, would be minimal.

There are some other considerations that I don't want to neglect. First of all, these sentry platforms might be seen as "sitting ducks," begging the Soviets or others to shoot them down at the outset of any war. But at 80,000 feet, they are above the reach of most aircraft and

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air-to-air missiles, especially for a Soviet fighter whose nearest base is thousands of miles away. Also, since there would be no metal used in their construction, and if relatively passive sensors could be used that would not mark the platform's position (as are now being considered for use in the AOA aircraft), the platforms would be invisible to radar or anything but the naked eye. Three or four of them might present a tempting target at the outset of hostilities, assuming a potential adversary could locate them, but is an enemy really going to go after 100 needles in the haystack? If the enemy did, of course, the United States could have many reserve platforms standing by below, and the cost of the fighter mission to destroy one would probably far exceed the replacement cost.

If the platforms were on station over Alaska or treaty-ally Canada, of course, then an attack on the sentry platforms would be an act of war as much as an attack on an American airplane in US airspace or an American ship in US territorial waters. If the Soviets would launch an all-out attack against 100 or more sentry platforms, they would certainly do the same against a more easily locatable fleet of metal-skinned AOA aircraft flying in the same general region but at a much lower altitude. And unlike the platforms, the airplanes would have to carry vulnerable human crews.

Also, while it might be difficult to arm a large AOA airplane with anti-missile weapons, there is no reason the sentry platforms on station might not also serve as weapons platforms—let the strategic defense missiles be launched from there rather than from the ground. Weapons could be fired from the sentry platform, or from a similar platform nearby carrying a shorter-range sensor and depending on external control, not only to protect the platform but also to protect the territory below. Such a system might, of course, involve a whole host of ABM treaty problems, but that's true of many strategic defense

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concepts; the concept certainly shouldn't be ignored just because it might involve treaty violations.

Another possibility is that the computers and associated equipment could not be detached from the sensor. In that event, a single sentry platform could carry the whole power train, sensors, and requisite computers. To lift the added weight would require a much larger craft and so be more expensive, but the cost certainly would not approach that of a Boeing 767.

Even if it were found necessary to have a crew aboard the sentry platform, that too would be fine—they could stay aloft for duty tours of a week or more, kind of like pulling watch in the Minuteman siloes right now or serving in a nuclear submarine. Yes, a crew might perish in time of war, but that's always a risk for everyone in uniform. At the end of a watch period, a given sentry platform could be replaced by one with a fresh crew, or the original platform might stay on station and the crew be changed by means of a more strongly powered "ferry blimp" at regular intervals.

Given the proposed use of what is now quite old technology, this suggestion may sound frivolous, but it is deadly serious. Admittedly, we're only talking about saving tens or perhaps hundreds of millions of dollars, which may be peanuts to some of the big defense contractors. President Eisenhower warned the country about before he left office. But the strategic defense decision is crucial to the Department of Defense, particularly to the uniformed services.

I make this last comment because one of the unfortunate bits of fallout from the Vietnam War was total and willful ignorance by virtually all of the officer corps of the cost of military arms and equipment. During that war, the US military literally had armaments, supplies, and resupplies to burn—which, to our great discredit, we often effectively did. I was an infantry officer on the ground then, and on more than one occasion, when in

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contact with enemy forces, we would almost magically have more artillery and tactical air support hovering insistently above us and behind us than we could possibly use. So we wasted it—Maybe there's an enemy unit over on the other side of that mountain. . . . The attitude of commanding officers in the rear was, Anything our boys need, in abundance, to fight this war. The standing orders for tactical support aircraft were to expend their munitions before they came back to base. The result, I'm afraid, was that a lot more empty woods than enemy positions got bombed. And in the rear, where 90 percent of US troops were safely stationed, the rules of "garbagification" and "combat loss" were little different. The result was a reality and an enduring image of wastefulness and indifference to return on dollars invested. That pattern still, and often rightfully, even some twenty years later, blights the image of the military.

The military officers running the Strategic Defense Initiative Organization have an opportunity to investigate the real, significant saving of some hard-earned money entrusted to them by the American public, in a way that could result in superior performance of a key mission. The alternative is to continue to pay top price for a product devised by the seller of the product and touted as the only effective way to perform a military mission. The members of the military services owe it to themselves, for the sake of their image in the public eye and their self-respect as professionals, to do a little conceptual block-busting and take a fresh look at some of the outlandishly expensive systems they are buying from self-promoting salesmen, before such unchallenged purchasing power is taken back from them by outraged taxpayers.

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THE PRINCIPAL AIM OF ANY US STRATEGY HAS ALWAYS BEEN to achieve peace, security, and prosperity for the American people. Assuring the viability of the American economic and political systems has been fundamental for achieving that goal. Since the last world war, the United States has also recognized that peace and prosperity in other regions of the world, particularly in Europe and among other allies, are requisite to meeting those goals at home.

Following World War II, the United States perceived world communism and the Soviet Union, its exponent, as the chief threats to these national goals. Communist ideology was hostile to the traditional American values of free choice, human and property rights, and personal freedom. Americans perceived communism as infectious and expansionary. It threatened to turn friends and allies against the United States. In fact, the United States felt doubly threatened, for it feared the spread of communist ideology through the efforts of an expansionary great power. Great power adversarial relations had fundamentally changed.

### THE COLD WAR AND CONTAINMENT

IN RESPONSE to this challenge, George Kennan's concept of containment sought to restrict Soviet expansion until

J. Michael Cleverley, US Department of State, wrote this essay while studying at the National War College. The essay won recognition in the 1989 JCS Strategy Essay Competition.

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institutional frailties in the Soviet system forced its breakdown. NSC document 68 formalized this strategy of containment, which at various times meant containing the spread of communism, containing Soviet expansion, or both. But in all instances it was a strategy of East-West conflict and "Cold War," aimed at winning a competition with the Soviet Union and its communist affiliates, preferably without hostilities.

Kennan's strategy of containment addressed remarkably well the safeguarding of American interests in the immediate postwar period. Only the Soviet Union was capable of posing a threat to the United States, which, alone among industrial powers, emerged from World War II with both its economy and political institutions intact. Focusing American security policy on the Soviet threat was based on an astute assessment of a new world born from the war years. The new strategy rightly avoided the temptation to see US policy through prewar or wartime eyes.

By the end of the 1980s the successes of American postwar efforts to counter this threat were plainly visible. The reconstruction of war-ravaged Western Europe and Japan had long since achieved viable, anti-communist political and economic systems. Europe and Japan had experienced 40 years of peace and prosperity. Following immediate postwar victories in Eastern Europe, the Soviets had gained no new ground in Europe and were beginning to lose pieces of the empire they had built, had totally failed in China, had met defeat in Afghanistan, had been expelled from Egypt, and were left with only a few countries like Castro's economically depressed Cuba as trophies from their Cold War efforts. Even the once big European communist parties had fallen into decline. As Kennan predicted, the frailties of the Soviet system finally caught up with it, and it had become painfully clear to the Soviets and nearly everyone else that Soviet-style communism has little credibility in the modern world.



### A POST-COLD WAR ERA

MOST EUROPEANS AND AMERICANS would agree that Gorbachev's policies of *perestroika* and *glasnost*, his apparent desire for substantive arms reductions in Europe, and his more liberal attitude toward Eastern Europe hail a new phase of East-West relations. I will call this new age the post-Cold War era, not, however, to suggest that all elements of Cold War competition and conflict have disappeared, nor to say the world might not revert to Cold War-style conflict, especially should Gorbachev's foreign and domestic initiatives fail. The fact remains that these initiatives themselves virtually herald the success of US Cold War policies, the failure of the Soviets, and the fact that we are in a new era, whatever we call it.

In this post-Cold War world, threats to US goals have not disappeared. They have changed. They are multidimensional and multipolar, coming not just as a politico-military threat from the Soviet bloc, but as economic-commercial threats from Western Europe and Japan or as political-economic *and* military threats from the Middle East. On the political front, conflicts outside the East-West context can have a major effect on American interests. The Iranian revolution and US Embassy takeover, the Iran-Iraq war, and the Persian Gulf crisis of 1990, for example, underline the fact that regional conflicts can pose immediate threats to America's goals of peace and prosperity. More and more, the United States has found itself protecting interests that have only indirect relevance in US-Soviet relations, interests especially remote from that great war in Central Europe to which a preponderant amount of strategic thinking and military resources have been devoted for several decades.

At the same time, Western economies have become highly integrated, with the result that all actors are linked in a nearly unbreakable embrace of interdependence.<sup>1</sup> Other nations' economies have considerable effect on the

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American standard of living. Japan has become an economic superpower alongside the United States and, with a totally new group of countries, the newly industrialized countries (NICs), is capable of jeopardizing entire industries in the American domestic economy through floods of cheap imports. The American trade deficit, its resulting strain on the dollar, the erosion of the United States from creditor to debtor status, and the massive infusion of foreign investment into all sectors of American life emphasize the complexity of the post-Cold War world, where non-military threats and developments can alter the United States' relative power and world position. The US government's difficulties in developing and implementing a coordinated international economic strategy—as most recently evidenced by its inability to answer the challenge of Japanese trade power—have been lamented for some time.<sup>2</sup> The question now is how to relate to a world in which US interests are more vulnerable to a broader range of events and a larger number of countries than before?

### **SOME ASSUMPTIONS**

AS WAS CONTAINMENT in its time, a global strategy for protecting American interests and achieving national goals in the 1990s should be forward-looking. It must reflect the fact that threats and American vulnerabilities can no longer be seen merely in the context of East-West rivalry. And just as the world has changed, so have resource constraints become ever more binding. Budgets will inevitably be tighter over the next ten years. American military, diplomatic, and economic assets will need to be carefully allocated in order for any strategy to be successful. A strategy that attempts to mobilize these limited resources to assure the long-run political objectives of peace, security, and prosperity has to be different from

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the Cold War strategy that dealt with essentially a one-dimensional threat in a bipolar world. The United States cannot afford to fight the last war.

Any attempt to define a suitable strategy for the post-Cold War years needs to begin with definition of present and future trends that influence US efforts to achieve long-term goals of peace, security, and prosperity for the American people. Following are some of these trends that I assume any US strategy will undoubtedly need to address:

—The Soviet Union will remain a major military rival and potential threat to the United States.

—The American standard of living has become vulnerable to foreign economic power.

—Diverging American and European interests no longer correspond as closely as they did during and immediately after World War II.

—Regional conflict is the most likely context for military action.

—The United States is no longer *the* predominant hegemonic power in the international system.

—The United States, as a global power, does not always receive from its allies the cooperation it needs to meet national objectives. It must, therefore, keep open its option for unilateral action.

## POST-COLD WAR STRATEGY

POST-COLD WAR STRATEGY will be more difficult to formulate than Cold War strategy. Containment offered a neat,

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comprehensive, cohesive strategy that defined a single threat and a single objective. The means varied and were responsive to the Soviets' real or perceived efforts to spread their influence and ideology into Europe and the Third World. Arguably, containment was also less global than its appearance would suggest, for it focused squarely on the Soviet threat, which was most intense in Europe. US interests were tied closely to West European interests, and most US resources were thus employed in Europe as part of an Atlantic alliance. In that sense, American Cold War strategy was greatly an Atlantic regional policy.

By contrast, an effective modern strategy will be much *less unified* around a central theme; its elements, *more diverse*; and its thrust, *eclectic*. Addressing multiple threats, a relevant strategy will be as *multidimensional* as the threats to American interests in today's complex world. It will also be much more a global strategy than in the past, in that American interests are less tied to only one regional set of issues. The threats to American interests are more geographically dispersed than before. A new strategy therefore will be *multipolar*.

The practitioners of post-Cold War strategy should be a varied group of people with an extensive range of expertise, for policy formulation will issue from a different set of questions than in the past. For example, in formulating US policies toward specific international issues and situations, the first question most American policymakers have asked in the past has been defensive and responsive, just as containment policy would dictate: Are the Soviets involved (particularly in spreading communism)? In post-Cold War strategy, the first question should be, What is the range of US interests at stake? Containment is not automatically an "interest." The Soviet factor does not definitionally set the parameters of the answer. Resolving the newer question should involve weighing US interests on their own merit, quite separate

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from the Soviet variable. Failure to focus on this new question will drain scarce American resources and political resolve while perhaps failing to meet the long-term threats to American interests. Some analysts might argue, for example, that there would not have been a Vietnam War had the second rather than the first question dominated the policy debate.

Thus, meeting challenges to US interests should begin with an analysis of the challenges themselves, rather than with an attempt to perceive them only as part of a global contest by filtering them through a definitional East-West context. What is fundamentally important is how those challenges affect the complex range of American interests that flow from the nation's overall goal of assuring peace, security, and prosperity.

## ADDRESSING THE NEW ISSUES

THE SIX ASSUMPTIONS I listed earlier offer a convenient vehicle for discussing how a post-Cold War strategy might address the broader range of issues facing the United States. This discussion is not meant to provide the framework for a post-Cold War strategy, but rather to give examples of the elements such a strategy might contain, as well as some suggestions of possible means for implementing those elements. Although the challenges and the responses appear diverse and distinctive, a common set of ideas runs throughout a modern strategy.

### **Post-Containment and the Soviet Threat**

Talking about "post-containment" policy does not mean containment per se is totally divorced from American strategy. US policy toward the USSR is still a primary determinant of American strategic thinking. It is only prudent to continue to question Soviet motives. No one in the West can be certain of the Soviet Union's long-term

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political agenda. Gorbachev's reforms are still new and essentially unproven. Even his survivability remains something only soothsayers venture to project. The Soviet quest for expansion or communism's promise of world conquest may only be temporarily dormant. It is too early, to say the least, to consider dismantling the infrastructure of containment, the NATO alliance and forward positioning of US troops in Europe and South Korea.

Whether or not we are now past the era of Soviet imperialism, moreover, the fact remains that the USSR is *the* other superpower, with sufficient military might to challenge or intimidate at will any country, including the United States. Soviet military power still is the single most potent threat to the United States. The Soviet Union could overwhelm Western Europe in a swift conventional war or devastate the United States in a few minutes of nuclear attack. In purely geostrategic terms, Soviet interests will inevitably clash with US interests. Regardless of Gorbachev's success, rivalry between the United States and the Soviet Union will continue into the future.

Post-containment policy, however, weighs events for relevance to US interests outside of past perceptions of perpetual East-West struggle. Unclad from its predecessor's ideological covering, post-containment strategy does not seek to check Soviet initiatives *per se* but accords importance to them by how they influence overall US objectives regionally or globally. American policy can then become issue specific, whereas in the past it has tended to subordinate specific and regional interests to an overall global objective. US policy will become more realistic and pragmatic by recognizing that, although the Soviet Union is the major military adversary, American interests are often threatened in complex and complicated ways, not always by the Soviet military machine.

The Soviet Union thus will occupy a central position in American policy but will not, as in the past, dominate

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the overall thrust. For example, Soviet efforts to achieve influence in the Third World may not necessarily threaten American interests unless those interests can be defined apart from the Soviet variable, as was possible when US naval forces were deployed to the Persian Gulf.

More specifically, in the post-containment world, the unimaginable consequences of nuclear war with the Soviet Union will continue to motivate efforts to deflate East-West confrontation and to stabilize relations to the point where conventional conflict in Europe and global nuclear exchange become increasingly more remote possibilities. The Soviet Union appears to share this objective with the United States. Soviet troop reductions in Europe, at least on the surface, suggest the USSR is moving in good faith toward alleviating tensions. US policies toward the Soviet Union should promote that process, seeking full reciprocal benefits for American concessions.

Nevertheless, one might question whether it is in the US interest to see a full integration of this erstwhile pariah into the international system. For example, Soviet accession to the General Agreement on Trade and Tariffs, or GATT, and the International Monetary Fund complicate the United States' performing effectively in these institutions. Economic, trade, and monetary problems already dominate American relations with a number of countries, particularly with the European Community. A new polar dimension to these institutions would be most unwelcome, particularly from an American point of view. The potential for Soviet mischief, hence for greater leverage on American policy, will grow to the extent that the Soviets enter the postwar multilateral institutional arrangements. Although opposing Soviet integration in these bodies might pose some risks, the United States may wish to do so until it becomes clear that there is mutual advantage to the United States in supporting the Soviets' entry. Again, the relevant question is, How will Soviet accession affect American interests—that is, does it

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permit our major adversary to expand its challenge to our interests into areas where it has previously been unable to venture?

**Vulnerability to Foreign Economic Power**

In the immediate postwar period, the US economy made up as much as 40 percent of the world product. Today, it is about half that. During the 40 years over which Europe and Japan rebuilt from the rubble of war's destruction, technological innovations allowed for extensive economic linkages between them and the United States. Sharp competition, the vast complexity of modern production techniques, gradual relaxation of capital and exchange controls, and instantaneous transmission of vast amounts of information furthered the pace of interrelationship until all major industrial economies and many developing economies were locked into the tight grip of interdependence.

Vulnerability has come with interdependence. American prosperity is ever more dependent on foreign economic power. Here are some examples:

—The default of major Latin American debtor countries could lead to the collapse of a number of America's largest banks. Such a failure could have a severe effect on the American standard of living. Bailing out these banks to prevent such a collapse would come at the cost of billions of American tax dollars.

—The availability of less expensive foreign-produced articles has led to severe stress on major American manufacturing sectors, such as steel, automobile, textile, and even consumer electronics industries. Millions of American jobs are at issue.

—European Community farm subsidies have led to major incursions into traditional markets for American



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farm products, thus exacerbating already serious problems in the American farm community.

—Hundreds of billions of investment dollars have flowed into the United States over the past few years to buy American public debt, property, banks, industries, and retail outlets. The long-term economic and political implications of this change in ownership are perhaps still to be seen.

—Successful OPEC action can, as it has in the past, generate double-digit inflation in the United States as petroleum producers maximize profits at the expense of American consumers.

—Foreign actors, taking advantage of the openness of the US economy, can appropriate American competitiveness through the US educational system and the transfer (licit or not) of intellectual property and technology.

International economic issues might be becoming strategic in that they have the potential to negatively influence the long-term sovereignty, prosperity, and leadership role of the United States. The United States has already lost an appreciable amount of its ability to control domestic events and trends. It is therefore important to prevent that loss of "political-economic sovereignty" from resulting in events that are economically and politically undesirable to the United States. Economic issues also now directly affect America's international leadership role. For example, the United States risks losing the respect of its allies and the NICs to the extent it is unable to make necessary economic adjustments that it freely urges on others.

A global strategy that takes these threats into consideration is much more complex than one focused sharply

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on East-West issues. At the same time, it is more responsive to American interests. It requires a shift in the way policymakers have approached strategic evaluation, one that breaks the prevailing mind-set of Cold War thinking. Clearly, more versatility and expertise will be required if policy is to be formulated and coordinated successfully. Few foreign policy czars can substantively deal with issues as diverse as currency stability and strategic arms reductions. Officials with broad perspective will need to team up with experts to formulate policy responsive to political needs.

To address the new challenges, the American security policy apparatus should reflect the need to deal effectively with economic threats to American interests. Several key economic policymakers are not now members of the National Security Council. In addition to the secretaries of state and defense, the secretary of the treasury should be a permanent NSC member. The US trade representative and the secretaries of commerce and agriculture, if not full members, might also participate officially in the NSC, for they are integral to the formulation and implementation of American foreign economic policy. The NSC staff, from the national security adviser on down, should also reflect in their expertise and predilections the changing environment, in which economic issues are crucial. Such integration and central control would have to overcome the inherent fragmentation in the coordination of American international economic policy, where the US trade representative and officials of the Commerce, State, Treasury, and Agriculture Departments all compete for turf and leadership.<sup>3</sup> In short, an organization that worked well in formulating America's containment policy is too narrowly defined for meeting today's needs and might serve the nation better if broadened and expanded.

At the same time, domestic policies can no longer be drafted in a vacuum. Many domestic economic policies

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have international implications, which once might have been ignored, but which today come back home to roost. During the early 1980s, for example, American domestic economic policy was framed with little regard for the dollar's exchange rate. The consequent strong appreciation of the dollar eventually resulted in immense losses to American industry and workers, unable to compete on international markets at existing exchange rates. The present budget deficit can also be seen in this light. Although essentially a domestic problem, it has international repercussions that eventually rebound into the American economy. International implications of domestic policies must be assessed at a central strategic level where they can be evaluated for potential effect on American interests.

#### **Diverging American and European Interests**

During the first two decades following World War II, American and West European strategic, economic, and political interests coincided. The United States and its West European allies were committed to preventing the spread of Soviet influence, particularly into Europe. The bulk of American defense spending was earmarked for fighting a war in Europe, and American nuclear forces were the ultimate guarantor of security in Europe. The United States and Western Europe *were* the developed world, sharing modern industrial market economies. The United States and Western Europe also shared a common philosophical heritage and mutually cherished the ideals of democracy and human rights. The wartime experience and perceived common Soviet threat of the ensuing Cold War bedded down America's strategic policies with Europe's; "Western security" tended to be defined in the NATO context. Issues outside of Europe—"out of area" issues—have usually been contentious points between the United States and its allies.

In the post-Cold War world, however, American and West European interests may not correspond so

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closely. The United States, for example, is increasingly aware of the Pacific and of its partners and allies there. Japan has emerged as a competing economic and technological superpower alongside the United States. America's two-way trade with its Pacific trading partners has grown by leaps and bounds as these new industrial economies have formed strong economic relationships with the United States. Since 1983, US-East Asian trade, valued at about \$230 billion in 1987, has exceeded American trade across the Atlantic. Japanese direct investment in the United States at the end of 1987 was \$31 billion; US investment in Japan was \$22 billion.<sup>1</sup>

While the United States entertains questions about its new relationship with Asia, Europe is focusing more on itself. It worries about relative economic and technological decline. "Eurosclerosis," many fear, is not over, and the 1992 internal market is billed as the panacea to still-high levels of unemployment and slow rates of growth. The 1992 process itself is a movement away from Atlanticism, as Europeans focus on integration in order to emerge on a more equal footing with the United States and Japan. Whether or not the 1992 exercise leads to a fortress Europe, as some Americans fear, it will result in a more self-contained and independent Europe. For some years now, EC-US competition, particularly over agricultural trade issues, has threatened to break out into a global trade war. Perceptions of a lower military threat from the Soviets, along with Soviet and East European desires to cooperate with West European countries, further promote a greater sense of European identity, one that resists the Cold War notion of East-West division. West European reluctance to support American initiatives outside of Europe—for example, Europe's slowness to cooperate with the United States in counterterrorism (until after the Libya bombing)—has only furthered the drawing apart of American and European notions of collaboration.

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All of this has implications for America's global strategy, especially in an era in which the need for deficit reduction severely constrains defense spending. A multi-dimensional strategy does not focus only on warfighting in Central Europe. And just as the threats to American interests are no longer only military ones, neither are they unipolar. American interests now extend to the Pacific and elsewhere, not just to Western Europe. Throughout the Cold War period, the United States has joined Western Europe in viewing the world from either an East-West or a North-South perspective. The country may well think of breaking that pattern, for America may sometimes now identify its interests more with other countries, such as China (formerly lumped with the "East") or Singapore and Argentina (formerly of the "South" grouping), in confrontations with its "Western" partners, such as the EC.

This is not to say that American and European interests and threat perceptions no longer intersect. The United States and Europe, in the future as in the past, may more often than not continue to share common objectives. The point here is simply that US interests have expanded while Europe's appear to be more inwardly focused but outwardly more in competition with US interests than before. In response, the United States will want to chart an independent course based on US interests, but still seeking cooperation from Europe where interests converge.

Instituting more formal ties with its Pacific partners, as the United States carefully did with Western Europe in the postwar years, may be important for developing these new Pacific relationships. There have been a number of calls for a multilateral Pacific organization to coordinate economic and social cooperation, much like the Organization for Economic Cooperation and Development, which admittedly has some Asian membership but which is primarily Atlanticist.<sup>5</sup> Existence of such a Pacific

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institution, if membership were limited to developed or rapidly developing market economies, would allow the United States to work out differences and exploit common interests with Pacific partners in an organized way.

More immediately, the United States might effectively get more from its limited resources by expanding bilateral cooperation with key countries outside Europe. For example, the United States and Japan might more fully cooperate in allocating aid and even security assistance in the Pacific and Asia. With time, investment, and effort, the United States might find similar partners in Latin America and Africa. These partnerships would not be defined only in military "big brother-little brother" terms so common in the past, but as more equal, outlook-ing, and multidimensional relationships, especially in regard to economic and social issues. Shifting the dialogue from its traditional focus on how to contain the Soviets to a sharper focus on regional issues of mutual interest could reveal abundant trade-offs. For example, working with Japan, the United States might agree to protect the oil sea lanes from its bases in the Philippines if the Japanese provide large-scale aid to the Philippines. Broader collaboration with countries beyond its European allies might provide the United States fruitful means for maintaining its global leadership at reduced cost.

### **Regional Conflict**

Although the largest share of US military spending over the postwar years has been directed toward deterring all-out war in Europe with the Soviet Union, the actual use of American forces in combat situations has normally been outside Europe and more often than not outside the East-West confrontation. Although countering communist-inspired insurrections has been a common reason for committing those forces, these conflicts increasingly have been regional with limited Soviet involvement.<sup>6</sup> The United States has continued to project

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Soviet forces as the enemy, but, in practice, regional conflict has been and is likely to be the challenge to which the US military will respond. During the Reagan administration, for example, American forces were used in Grenada, Libya, Lebanon, and the Persian Gulf. Checking the spread of Soviet and communist influence received some lip service in most of these instances, but only in Grenada was that a primary motivation. Elsewhere, other American interests were at stake.

Postwar US military posture has deterred Soviet aggression, and it is difficult to know what Soviet ambitions might have achieved without that deterrence.<sup>7</sup> Nevertheless, post-Cold War strategy must lead to planning for a world where the likelihood of all-out conventional or nuclear war with the Soviets is decreasing while the need to protect American interests in the Third World is ever present. As Edward Luttwak recently put it, "If you are running a hotel and no guests are coming, it is not sensible to continue putting cut flowers in every room. A rational hotelier would instead put the money towards the purchase of new furniture."<sup>8</sup> In contrast to the doctrine of flexible response, limited aggression should not be seen as merely one of many forms of East-West conflict, but rather as a threat to American interests regardless of context.

Such a post-containment policy must begin with an assessment of American interests discretely rather than as part of an overall geostrategic policy. Regional allies should be encouraged to take more responsibility for their regions through aid, economic activism, and selected military enhancement. And where it is decided to deploy American military force, that decision, in an ideal world, should not be limited by a force structure that is too heavy with too short a reach to be used effectively.

The Maritime Strategy foresees the need to be able to react to regional conflicts, but political constraints on the

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use of American foreign bases and "legs" that are too short often limit the use of American air or land power, regardless of what the Navy can offer. Post-Cold War strategy should therefore provide for improvements in American forces so they can better respond to regional conflicts, thus allowing policymakers greater flexibility to pursue military options. And in the longer run, bringing force structure more in line with likely needs may be economical, for it may be possible to save funds now allocated for warfighting in Europe and funds spent in arms races with the Soviets to develop large, expensive weapon programs to counter the opponent's latest systems.

#### **The Decline in American Hegemonic Power**

American hegemony in the Western system is still a fact. Not only does the United States lead, but its allies expect it to lead; if it does not, as many perceived to be the case in the late 1970s, its allies become nervous. Nevertheless, with the resurgence of Western Europe and Japan, the United States ceased to be able to dictate or influence outcomes in multilateral forums as easily as it could 20 or 30 years ago. The anomalous postwar power alignment changed, making it much more difficult for the United States to influence world events.

The United States now finds itself in a multipolar world where there are *economic power centers*, such as the European Community, Japan, OPEC, and the newly industrialized countries, *strategic power centers*, such as the USSR and China, and perhaps even *political power centers* beyond those already mentioned, such as the United Kingdom, Germany, and India. Only the United States' power base is so broad as to place it on all three lists—perhaps at the top of each.

To maneuver effectively in such a multipolar world, the United States should not identify its interests in terms of only one region of the world, for it may find allies on



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some issues that are opponents on others. The United States may find that its power, coupled with that of any one or two other power centers, is enough to influence issues toward outcomes that are in the American interest. Again, such a strategy must recognize that the bipolar world of the Cold War era has come to an end. In fact, there may be areas where US and Soviet interests so closely coincide that East-West conflict is readily replaced by cooperation to achieve ends that conflict with the interests of other world players.

Because of the size and breadth of its power base, American strategy might look toward triangular relationships that vary from issue to issue and result in alliances strong enough to overwhelm opponents. The United States would thus avoid broad alliances with other powers, but would hold separate alliances on individual issues as ready possibilities in order to ensure a containable, manageable level of tension in the system and thus exploit its dominant power position. Counter-alliances aimed at the United States would not work so well, for few power centers, even when coupled with others in opposition to the United States, can force much more than a stalemate. Checkmate in triangular relationships usually would require US partnership, because of either the breadth or the magnitude of American interests and power.

For example, stronger cooperation, perhaps through the formalized relationship suggested above, with America's Pacific trading partners could give the United States added leverage when debating trade and other economic issues with the European Community. In other instances, the United States might find an alliance with the EC against Japan and the NICs in its interest.

#### **The Option of Unilateral Response**

Postwar American policy has emphasized cooperation in multilateral forums for attaining American objectives.

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The United Nations, the Bretton Woods institutions, NATO, the OECD, the G-7, and so on have, at least until the Reagan administration, been paramount in American foreign policy. Through them the United States has been relatively successful in achieving concerted action that attempted to maximize the West's resources in achieving strategic objectives. From the Korean conflict to INF modernization, multilateral effort has usually facilitated American initiatives. There is no question that multilateral cooperation will continue to be a primary tool in US foreign policy. As US hegemonic power recedes, multilateral cooperation will become even more important, especially on a regional basis, for promoting American aims with limited resources.

But multilateral cooperation has not *always* been successful. For one thing, multilateral forums have often become arenas for voicing opposition to the use of American power. And on a number of occasions, multilateral cooperation has failed to materialize or has forced the United States to pursue avenues that were second or third best for meeting its objectives. For example, the NATO burden-sharing debate itself witnesses US frustration with the inability of multilateral cooperation to sufficiently bolster Western defense. The international financial system has not always been successful at easing strains on the United States caused by its role in the system. Multilateral cooperation was limited and slow in coming in the Iranian hostage crisis. The United States had great difficulty in achieving West European cooperation in counterterrorism despite numerous initiatives and trips to Europe by high-level US officials. Only after the Libyan bombing demonstrated American determination to proceed unilaterally did Western Europe agree to greater multilateral cooperation.

If Europe in fact becomes ever more European, and American interests continue to extend ever farther into other regions of the world, the United States will likely

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continue to face difficulties eliciting multilateral cooperation for meeting *American global objectives*. Although multilateralism may continue to be the preferred approach (for it avoids or lessens the backlash against "heavy-handed" exercise of US power), a full recognition of the role unilateral action must play in American policy will prevent delayed responses and wasted effort. For example, Carter's fruitless initiatives to get greater European support for dealing multilaterally with Iran delayed his military option so long, some might argue, that it fatally jeopardized the eventual rescue mission. Interests of the United States, as a global power, will inevitably diverge from those of regional powers. In strategic planning it is thus important to develop a potential for unilateral alternatives, be they political, economic, or military.

Politically, the prevailing mind-set must accept early unilateral action as a viable option. Economically, preserving the dollar's dominant role in the international system is a valuable objective, because a powerful dollar allows American economic policy latitude it would not otherwise enjoy. And militarily, the need for unilateral response in regional conflicts requires an adequate force structure and level of preparedness, achievable through naval power and maintenance and extension of the legs of American land and air power.

#### THEORY AND PRACTICE OF POST-COLD WAR STRATEGY

ONE MIGHT POSIT that the threats and situations I have discussed are not new or unrecognized. Policymakers have struggled with them for years. That may be true in practice, but it is certainly less so on the level of strategic thinking. The dominance in postwar thought of East-West conflict, containment, nuclear conflict with the Soviet Union, and potential war in Europe was so pronounced, and the need to think in other terms so con-

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strained, that even today strategy and security are still defined in a Cold War, East-West, Soviet-fixated framework. We are still to a great extent prisoners of past strategy.

Although some components of the US bureaucracy tirelessly work every day on these "post-Cold War threats," the overall approach is normally ad hoc, not linked to a strategic view, and generally downgraded to "lower diplomacy" or "low intensity," often connoting lesser significance. Soviet intrusions anywhere nearly always evoke a containment-like response from the United States. On the strategic level, national security is still considered mainly in its military context. The NSC membership is not organized to be responsive to broader concepts; the senior NSC staff normally has limited functional expertise outside East-West issues. Most military resources still are channelled toward fighting the great war in Europe. In the State Department, where the reality of modern international relations forces it to deal with broader issues than East-West relations, there is still neither the time, inclination, nor bureaucratic space to relate matters in even as eclectic a strategy as discussed in this paper. The department still is a tactical fire brigade, rushing from fire to fire.

In short, although the United States now may find itself in the *practice* of exerting national power to achieve post-Cold War objectives, the *theory* is poorly articulated, if at all. And the overall policymaking structure is still greatly preoccupied with something else. The *disjunctures* between that theory and practice have the potential to lead policy along the wrong paths. Is it only the pain that the Vietnam experience still inflicts that prevents America from going that route again? Perhaps time will solve the problem with generational change from those who remember World War II and the Cold War to those who do not, or with a modern watershed, such as was the advent of nuclear weapons. Or perhaps the tide

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of necessity will eventually force a link-up between what the United States does and what it thinks.

### NOTES

1. Keohane and Nye have written most about interdependence. See Robert O. Keohane and Joseph S. Nye, *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, 1977).

2. See, for example, Russel B. Long, *Consensus or Confrontation: International Economic Policy at the Crossroads*, Report of Senators Long and Ribicoff to the Committee on Finance, US Senate, Subcommittee on International Trade, November 17, 1975; and Stephen D. Cohen, *The Making of United States International Economic Policy* (New York: Praeger, 1988), Chapter 11.

3. See Cohen, chapters 5, 11, and 12, for a good discussion of the evolution of the White House's attempt to coordinate policy formation and implementation in a highly fragmented Washington environment of bureaucratic claims and competition.

4. US Department of State, "East Asia and Pacific Regional Brief," January 1989.

5. In a speech to the New York Economic Club on 8 December 1988, for example, Senator Bill Bradley laid out an initiative to establish a *Pacific Coalition*. Bradley's *Pacific Coalition* would go beyond OECD-style cooperation in promoting, among other things, economic policy integration, such as an exchange rate mechanism similar to the EC's EMS.

6. Barry Blechman and Stephen S. Kaplan, *Force Without War* (Washington: Brookings Institution, 1978), chapter 2. Blechman and Kaplan estimate that US forces were used 215 times between 1946 and 1975. Eighty percent of these cases were outside Europe and 59 percent did *not* involve the USSR or PRC. Soviet and Chinese involvement dropped off sharply after 1955. For a contrasting view, see Robert H. Johnson, "Exaggerating American Stakes in the Third World," *International Security*, Winter 1984, pp. 151-181.

7. Some analysts are now suggesting that war in Europe with the Soviet Union was never as likely as postwar planners believed. See John Mueller, *Retreat from Doomsday: The Obsolescence of Major War* (New York: Basic Books, 1989).

8. Edward N. Luttwak, "Ready or Not: Cut Pentagon 'Readiness' Spending," *The Washington Post*, February 19, 1989, p. D1.

## REVIVING FLEXIBLE RESPONSE

*CHRISTOPHER C. SHOEMAKER*

IT IS POSSIBLE THAT 1989 WILL BE REMEMBERED AS THE YEAR that everybody gave up on NATO. It is becoming something of a credo amongst scholars and analysts of national security that NATO, having successfully met all of its objectives, is no longer required, and that the Cold War is essentially over, with the West emerging as the clear victor. This view is rooted, in the first instance, in the highly successful public diplomacy offensive conducted by Mikhail Gorbachev that has presented a new image for the Soviet Union—an image of a peaceful, if troubled, member of the international system trying earnestly to rejoin the community of nations.

Without entering the debate on the accuracy of the view which, after all, only the historians of the twenty-first century will be able to determine, strategists and planners must take a step back from the headlong rush into political euphoria to examine the implications of a different and far more dangerous future. It is at least a strong possibility that the East-West struggle that marked the past 40 years will reassert itself in the 1990s. The Atlantic Alliance must therefore continue the evolution of NATO's military strategy even as it pursues a political strategy to institutionalize a new security regime in Europe. Success in the former is a crucial hedge against failure of the latter.

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Lieutenant Colonel Christopher C. Shoemaker, US Army, wrote this essay while studying at the Army War College. The essay won recognition in the 1989 JCS Strategy Essay Competition.

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In this regard, the United States and its European partners need to ask whether NATO's strategy of Flexible Response remains a credible foundation for deterrence in the twenty-first century. This essay is an effort to identify the challenges to Flexible Response and to propose an integrated conventional-nuclear doctrine at the operational level of war as a means for restoring deterrence in Europe. My work is founded on the premise that, because of inherent uncertainties about the future of the Soviet Union, strengthening deterrence in Europe is not simply a topic of reactionary academic interest but is an active and relevant goal for global security in the 1990s and beyond.

### INFLEXIBLE RESPONSE

SINCE 1967, NATO has relied on the doctrine of Flexible Response as its bulwark of deterrence. To be effective, Harold Brown has argued, Flexible Response "requires that the alliance have employment options for all levels of the escalatory spectrum for response to aggression."<sup>1</sup> This criterion, in turn, requires that NATO possess reasonably credible capabilities of all types—conventional, chemical, and nuclear—so that the Soviets would be denied a *fait accompli* and would have to consider the very real prospects of any confrontation with the United States escalating to strategic nuclear exchange. General Bernard Rogers, former NATO commander, said,

If Flexible Response is to be credible, it must be supported by an adequate military capability for each leg of the NATO triad of forces—strategic nuclear, theater nuclear, and conventional.<sup>2</sup>

A review of current NATO capabilities and doctrine, however, reveals serious weaknesses in all three levels of the edifice of Flexible Response:

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*Extended Strategic Nuclear Deterrence.* Historically, the efficacy of Flexible Response has rested ultimate upon the credibility of the US strategic nuclear deterrent and the coupling of that deterrent to Soviet aggression in Europe. There can be little doubt that strategic nuclear deterrence works well at the strategic nuclear level; the Soviet Union is reasonably certain that an attack on the United States would elicit a nuclear attack in return.<sup>3</sup> The problem for the 1990s is that it has become increasingly difficult to keep the American strategic nuclear deterrent credibly extended over the European battlefield. In an era of strategic nuclear parity and mutual assured destruction, it has become increasingly unbelievable that the United States would invite nuclear devastation in an effort to redeem conventional defeat in Europe. In 1979, Henry Kissinger said, "it is absurd to base the strategy of the West on the threat of mutual suicide."<sup>4</sup> More recently, the DOD Commission on an Integrated Long-Term Strategy (the Ikle-Wohlstetter Study) argued that the United States cannot ensure deterrence if we "rely on threats expected to provoke our own annihilation if carried out."<sup>5</sup>

*Theater Nuclear Deterrence.* According to the Joint Chiefs of Staff, theater nuclear forces (TNF) in Europe

are a major deterrent to conventional, theater nuclear, and chemical attack, and are essential to a strategy of Flexible Response.<sup>6</sup>

As a partial response to the gradual erosion of the extended nuclear deterrent over the years, the United States deployed to Europe an array of battlefield weapon systems (short-range nuclear forces, or SNF). Moreover, in response to Soviet TNF buildup in the late 1970s, NATO began in 1983 to emplace an impressive arsenal of intermediate-range nuclear forces (INF) on the continent.



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INF played an important role in strengthening the linkage between conventional conflict in Europe and strategic nuclear exchange by introducing another step in a gradual and automatic escalation. Moreover, INF based in Europe could threaten the Soviet homeland with nuclear attack early in the escalation sequence. The credibility of INF was further enhanced by the positioning of the Pershing II missile battalions astride principal Soviet axes of advance, underscoring the possibility that NATO would use these INF systems early, rather than have them overrun by Soviet conventional forces.

In 1988, however, the INF Treaty went into effect. Although a watershed in arms control and a major political coup for the United States, the INF Treaty had a deleterious effect on deterrence in Europe by effectively knocking a rung out of the escalation ladder and by eliminating a weapon system greatly feared by the Soviet Union. General Rogers, an ardent foe of the agreement, argued that NATO "can't have disadvantaged conventional forces on one hand and strategic nuclear forces on the other and no coupling in between."<sup>7</sup> Implicitly recognizing Rogers' position, Ronald Reagan asserted the requirement "that our remaining theater nuclear forces be fully capable of supporting the Alliance's flexible response strategy."<sup>8</sup> This is a tall order and is not achievable without major revisions in SNF employment principles. This requirement occurs at a time when SNF are the *bête noire* of German politics.

*Conventional Deterrence.* In light of the declining credibility of extended strategic nuclear deterrence and the exacerbating effect of the INF Treaty, NATO is left with increased emphasis on its conventional forces. Although the issue of the conventional balance is hotly debated by scholars and analysts, NATO decisionmakers clearly perceive a significant imbalance in favor of the Warsaw Pact. Across the entire political spectrum, most would agree

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with Samuel P. Huntington that "the conventional wisdom is ... that stronger conventional forces are needed to ... compensate for the declining effectiveness of nuclear deterrence."<sup>9</sup>

Unfortunately, conventional forces are far more expensive than their nuclear counterparts, and an increase in conventional force structures can only come at a very high price tag. General Rogers estimated that a 4 percent real growth amongst the NATO allies would be adequate to compensate for the erosion of extended nuclear deterrence, but such growth appears to be a pipe dream. Indeed, since the Gorbachev initiative of 7 December 1988, NATO members have been clamoring for arms control agreements that would reduce, not increase, conventional forces.

Taken together, all of the factors outlined above underscore the urgent need to press ahead with NATO strategy and reverse the trends that Huntington says lead him to conclude, "Flexible Response is inexorably becoming a dead letter."<sup>10</sup> So we are left with a daunting challenge: Given severe and mounting resource constraints on both sides of the Atlantic and the absence of a political consensus within the Alliance, what can NATO planners do to set the stage for the revival of Flexible Response in the future?

#### OPERATIONAL DETERRENCE

IT IS DIFFICULT to imagine how NATO could restore the credibility of extended strategic deterrence, unless the United States were to unilaterally deploy a capable strategic defense system. Certainly, the US strategic nuclear arsenal remains crucial in deterring a Soviet attack directly on the United States and must be maintained. In the absence of a strategic defense breakthrough, however, NATO must contend with the reality

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of the erosion of extended deterrence. In order to revitalize Flexible Response, improvements must be made at the lower end of the deterrence spectrum. The central focus of NATO's efforts in the next decade must be on developing and refining what might be called an operational deterrent. This deterrent is composed of two essential elements: the development of an integrated conventional-nuclear operational art, and renewed emphasis on SNF.

Successful operational deterrence must rest, in the last analysis, on a combination of a credible defense and the ability to punish Soviet aggression with forces currently in the European theater. By raising the credibility of operational deterrence, NATO can compensate for the decreased credibility of extended strategic nuclear deterrence and the loss of INF.

#### **Toward An Operational Art for NATO**

In order to design an operational art for the Alliance, it is important to first consider the Soviet operational principles by which Moscow hopes to achieve its strategic objectives. These strategic objectives, and their operational translations, must be what NATO's operational art is oriented toward.

Within this context, the most basic, long-term Soviet objective in Europe is to achieve political and economic dominance over the continent, and to establish Soviet hegemony. With respect to the United States, Henry Kissinger argues, "the thrust of Soviet policy is to diminish American influence, if not to expel us from Europe altogether."<sup>11</sup>

Certainly, the Soviet Union would like to achieve this objective through peaceful means. However, should the Soviets decide to resort to a military solution, strategic goals will be achieved at the operational level. Soviet operational objectives would be to expel the United States from the continent and dismember NATO

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without endangering the solidarity of the Soviet empire or generating an irreversible spiral to strategic nuclear exchange.

Critical to the achievement of these operational objectives is speed; the Soviets need to exploit their extant advantages quickly in order to preclude the mobilization of Western industry and technology in a lengthy war, and to reduce the possibility of nuclear escalation. As the Ikle-Wohlstetter study argues,

The attackers would be aiming for a blitzkrieg, expecting to break through forward defenses quite rapidly and destroy much of NATO's nuclear force before it could be used.<sup>12</sup>

Deterrence in Europe would therefore be greatly strengthened by an operational art that promised the Soviets a prolonged war on the continent. Similarly, deterrence would be enhanced if NATO's operational art threatened the solidarity of the Soviet empire and the Warsaw Pact. Huntington submits,

Politically speaking, the Soviet Union has more to lose from Allied armies invading Eastern Europe than NATO has to lose from Soviet armies invading Western Europe.<sup>13</sup>

Although not expressing the problem quite in operational terms, several noted scholars and political leaders have proposed new strategies for NATO that are economically possible and support both perceptions. Perhaps the most dramatic of these is the global strategy of Discriminate Deterrence, an approach espoused by the Ikle-Wohlstetter study mentioned above. Among other things, Discriminate Deterrence proposes that NATO adopt a strategy under which the Alliance would respond to a Soviet invasion through Germany by launching its own operational counteroffensive toward the Soviet

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Union. This proposal is essentially an extension of Samuel Huntington's "retaliatory offensive" argument.<sup>14</sup>

Vernon A. Aspaturian argues, "the Soviets will defend with capabilities sufficient to overcome any means that can be mustered by the western Alliance."<sup>15</sup> If this assessment is accurate, then the Soviet Union would be required to draw down its offensive forces in order to prepare for a NATO counteroffensive. This requirement could well tip the balance in favor of deterrence. The Soviets could no longer count on massing forces with impunity, and they would have far less confidence in their ability to achieve a rapid victory.

NATO's Follow-on Forces Attack (FOFA), embraced by Discriminate Deterrence, represents another effort to attack the Warsaw Pact in its operational and political depth by destroying Soviet operational follow-on echelons before they have the opportunity to close to the front.<sup>16</sup> Both of these proposals are major steps in creating the daring and imaginative operational approach, targeted on Soviet centers of gravity, that is desperately needed to restore the credibility of Flexible Response.

#### **The Operational Case for SNF**

Unfortunately, unless the Alliance is willing to invest a great deal more in conventional forces, a credible operational art rests substantially on theater nuclear forces. Discriminate deterrence argues,

There should be less ambiguity about the nature of this (theater nuclear) deterrent. The Alliance should threaten to use nuclear weapons not as a link to a wider and more devastating war—although the risk of further escalation would still be there—but mainly as an instrument for denying success to the invading Soviet forces.<sup>17</sup>

Thus, while NATO improves its conventional credibility through operational art, it must be reinforced by a thorough integration of theater nuclear forces.

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If we accept Discriminate Deterrence as general guidance for an operational deterrent in Europe, short-range nuclear forces assume particular significance. In the absence of INF, SNF must shoulder the bulk of the nuclear burden. At the most basic level, SNF employment doctrine must support NATO's emerging operational art. SNF are uniquely capable in several important ways.

*Defeat of Soviet operational art.* Despite Gorbachev's pronouncements to the contrary, Soviet operational art remains primarily offensive; its success is tied to the defeat of NATO's conventional forces through devastating and overwhelming offensive action executed with blinding speed. This great emphasis on speed has resulted in the resurrection of the Operational Maneuver Group (OMG) by the Soviet Army. This force of multi-division size, massing in close proximity to the first echelon, represents the single most significant threat to current NATO war plans. Because of the Soviets' advantage in their ability to seize the strategic initiative and the requirements for NATO to spread its forces thinly, OMGs could penetrate deep into NATO's logistical infrastructure long before the West could react and reposition forces from less threatened sectors or achieve nuclear release. Given what Ikle and Wohlstetter call NATO's "static and shallow defense," the OMG represents the center of gravity of the Soviet operational offensive.<sup>18</sup>

Barring major increases in NATO's force structure and an operational reserve, SNF are the most effective response to the OMG. Large Soviet tank and mechanized formations massed in close proximity to the front represent ideal targets for LANCE missiles and, in some cases, for nuclear-capable artillery, particularly when modernized with extended ranges. Although it would probably be an exaggeration to argue that these nuclear weapons

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could destroy the OMGs under all circumstances, the possibility of their use would certainly give the Soviets great pause and would be an important factor in their decision calculus. Short-range nuclear forces would present the Soviets with increased prospects that their operational offensive, led by their OMGs, would not achieve the objectives critical to the strategic success of an attack on Western Europe.

Like most aspects of successful deterrence, the value of SNF as a counterweight to the OMG is a matter of pre-war perceptions. As NATO moves ahead with redefining its strategy and developing a supporting operational art, articulation of SNF as a considered option for defeating the OMG would do much to rebalance the deterrence equation.

*Maintaining Soviet dispersion.* A corollary to the argument above is that NATO's operational art must be designed to force the Soviet Union to maintain its concept of deploying its forces in echelons. Only if NATO is able to deal with Soviet forces serially does it stand a chance of prevailing in a theater conflict. If the Soviets are able to revert to their World War II emphasis on mass, then NATO's disadvantages in forward-deployed combat units and systems would spell disaster. The Soviets echelon their forces primarily because of the threat of SNF.

As William E. Odom states, the Soviets understand that "weapons of mass destruction require that one's own forces be dispersed in order to present few targets worthy of nuclear strike."<sup>19</sup> In World War II, for example, a Soviet army would routinely mass in an area of 70-80 square miles. Faced with nuclear attack, these formations now disperse over as much as 3,000 square miles.<sup>20</sup> Soviet strategist N. A. Lomov confirms, "Dispersal of troops is essential in a nuclear environment."<sup>21</sup> The reinstitution of the OMG flies in the face of this 40-year

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perspective and underscores the hollowness of NATO's current SNF employment doctrine. The Soviets apparently believe that the OMG can achieve operational victory before NATO's cumbersome release procedures can be activated.

A clearly articulated and reinvigorated SNF employment doctrine would, at the very least, force the Soviet Union to continue to keep its forces dispersed and to avoid massing its large armor formations, thereby giving NATO more flexibility and time. Indeed, modernized SNF, if supported by a credible employment doctrine, could force even more dispersal of Soviet forces, further helping to offset continued Soviet advantages in force structure.

*Support of Follow-on Forces Attack.* NATO's FOFA is largely built around the exploitation of emerging technologies to destroy Soviet follow-on echelons deep in Eastern Europe. It stresses non-nuclear application of combat power, largely delivered by aircraft. Yet FOFA could be supported by SNF with equal effectiveness, particularly as follow-on echelons close to LANCE range. Admittedly, the elimination of INF has taken a key operational weapon out of the hands of the Supreme Allied Commander in Europe (SACEUR) and his army group commanders, but the FOFA doctrine has an important role for SNF, as well as for air-delivered nuclear weapons. As with other deterrence-based arguments for SNF, it becomes important to articulate the FOFA role and to let it be known that nuclear weapons may become important contributors to the attack of Soviet second echelon forces.

*Support of NATO's Operational Counteroffensive.* One of the most dynamic employment options for SNF is as an integral part of a NATO operational counteroffensive, such as that proposed in Discriminate Deterrence. The



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proposed counteroffensive doctrine has elicited substantial criticism, including the view that it simply cannot be done. It is argued that without additions of up to fifteen divisions to NATO's force structure such attacks simply lack credibility. The Soviet Union would assume that it could brush aside a NATO counterattack with little difficulty.<sup>22</sup> Without debating the particulars of this argument, it appears self-evident that the addition of a nuclear component to the operational counteroffensive would change Soviet calculations significantly. The threat to use SNF would be particularly credible and problematic from a Soviet perspective, since an integrated conventional-nuclear offensive has always been basic to Soviet doctrine. As Soviet strategists say,

Nuclear weapons permit dependably neutralizing the enemy defense in the shortest time, forming breaches and gaps in it, and making maximum use of the extremely high mechanization of the ground force.<sup>23</sup>

Moreover, if the primary target of such a counteroffensive is, as Huntington argues, the "system of controls over Eastern Europe that the Soviets have developed over thirty years and which they consider critical to their own security," the threat of nuclear engagement would give the already reluctant East European allies of the Soviet Union further incentive to disassociate themselves from Soviet aggression in Europe.<sup>24</sup>

From an operational perspective, then, the integration of nuclear weapons into the counteroffensive would accomplish both military and political objectives. Militarily, SNF would make it far more difficult for the Soviet Union to contain or defeat the counteroffensive. The Soviets would have to commit far more forces to defending against the NATO counteroffensive, degrading their ability to achieve rapid victory on the central front. More significantly, the simple articulation of an integrated

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operational counteroffensive option would force the Soviet Union to reassess its offensive plans and redistribute resources to contend with a defensive as well as an offensive war. Any plan that forces a reduction in Soviet offensive power would, in turn, require a reevaluation of the probability of operational success and, as such, would have significant deterrent value.

Politically, the SNF dimension of the operational counteroffensive would enhance the ability of the theater and army group commanders to strike at a second Soviet center of gravity. Just as the OMG is a key Soviet operational center of gravity in the offensive, the cohesion of the Warsaw Pact is a strategic center of gravity that can be most effectively attacked through the operational counteroffensive. Any NATO plan that threatens Pact cohesion, even with a relatively low probability of success, will have a significantly positive effect on deterrence. The integration of SNF into the counteroffensive planning improves the probability of its success and, therefore, will help discourage the Soviets from launching an attack in the first place.

*Uncertainty.* One of the most effective dimensions of operational deterrence is that it contributes significantly to the uncertainty with which the Soviets will have to deal when contemplating aggressive options in Europe. The more risky and complex the Soviet decision calculus, the less likely the Soviets are to elect an offensive option.

In supporting this uncertainty principle, SNF play a particularly powerful part. It is clear that, although both the Soviet Union and, to a lesser extent, the United States have articulated doctrines for fighting on a nuclear battlefield, neither side has any real idea how nuclear warfare at the tactical and operational levels would really be conducted, and both sides are even less able to predict the outcome.<sup>25</sup> In addition to this macro-uncertainty, the effect of nuclear weapons on the individual soldier

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cannot be adequately gauged. Soviet writers have the opinion that "nuclear weapons will exercise an enormous influence on the mass of fighting troops ... [and will cause] ... panic, fear, and the crumbling of morale."<sup>26</sup> The Soviet Union would have to be vitally concerned with the cohesion of its combat formations in a nuclear environment, causing considerable uncertainty in assessing the costs and benefits of aggression.

### PUTTING BITE INTO SHORT-RANGE NUCLEAR FORCES

FROM EVEN the cursory examination of SNF presented above, it is apparent that short-range nuclear forces can contribute significantly to operational deterrence in Europe, particularly as an integral element of a NATO-based operational art. The extent of that contribution, however, depends upon changes in attitudes toward and procedures for SNF employment.

Procedurally, significant improvements should be made in the following areas:

*Release.* Regardless of the articulated integration of SNF into operational NATO plans, deterrence will not be significantly enhanced unless NATO can demonstrate a more streamlined release procedure. Critics argue that the current "bottom-up" release procedures are excessively cumbersome and that "the operational requirements of bottom-up release border on the impossible."<sup>27</sup> Change is therefore essential because, as discussed earlier, NATO cannot allow the Soviets the perception that they can achieve de facto nuclear preemption through rapid conventional success.

*Targeting.* Currently, the army groups have little apparent input on targeting; the targeting experts reside

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in the fire support elements at corps, division, and brigade levels. This arrangement gives de facto control over SNF to the tactical commanders, precluding an operational role for these critical nuclear weapons. Operational targeting of SNF can best be accomplished by a fire support element at the army group level, responsive to an operational planning staff and thoroughly integrated into army group operations.<sup>28</sup>

*Flexibility.* Preplanned nuclear "packages," in which nuclear targets are developed, grouped, submitted, and approved in relatively inflexible packages, should no longer be the sole targeting mechanism.<sup>29</sup> These procedures should be dramatically altered to allow engagement of targets of opportunity by the army group commander in support of campaign objectives. Packages will continue to be useful in that they provide maximum control by the national command authorities over targeting and employment. As such, they are the option of choice for using SNF employment as a demonstration of escalatory intent. In the combat role, however, packages impose unnecessary and burdensome inflexibility on tactical and operational activities.

*SNF survivability.* One of the most pronounced vulnerabilities of NATO's SNF is their peacetime concentration in fixed storage sites. To preclude presenting the impression that these weapons are vulnerable to preemption, NATO should adopt a doctrine that permits early dispersal of the warheads to delivery units as combat formations deploy from peacetime locations to their general defense positions. This will not reduce significantly the security of the weapons, since they will be guarded by the delivery units themselves; nor will it raise the possibilities of inadvertent or unauthorized use because the permissive action link (PAL) unlock codes will not have been released. Such a procedure will, however, reduce

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the Soviets' confidence that they can easily destroy these weapons in their peacetime locations. It will also send a message about the possibilities of early use of SNF in response to a Soviet invasion.

It is, of course, easy to recommend procedural change, but these have no hope of being adopted without some fundamental modifications in attitudes about nuclear weapons. Changes in attitude must, in turn, begin with an objective reexamination of the time-honored concept of the nuclear threshold. Since the initial deployment of SNF, these systems have always been regarded primarily as the first step beyond the threshold separating conventional from nuclear weapons. The "Gang of Four" has firmly argued,

The one clearly definable firebreak against the worldwide disaster of general nuclear war is the one that stands between all other kinds of conflict and any use whatsoever of nuclear weapons.<sup>30</sup>

It has long been accepted dogma that, although conventional warfare could be conducted for extended periods of time without necessarily escalating beyond conventional weapons, as soon as the first sub-kiloton 155mm howitzer nuclear round is fired, escalation to mutually suicidal strategic nuclear exchange becomes inevitable. That perception has led analysts of all political persuasions to urge that the nuclear threshold be raised as a matter of great policy priority.

Several factors now argue for a reexamination of that thesis, although such a reexamination would surely be treated as heresy. The factors driving such a study are the increasing lethality of conventional weapons, the decreasing lethality of nuclear weapons, and the drive to an operational art.

Major changes appear to loom on the horizon in the destructiveness of conventional weapons. Extant

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systems, such as artillery submunitions, "smart" warheads, and scatterable mines, presage the arrival of kinetic energy rounds, directed energy weapons, particle beam systems, lasers, and a host of even more esoteric weapons.<sup>31</sup> Ironically, the arrival of these technologies will be hastened by the research being done to support SDI, even though an impenetrable SDI itself appears to be at best a remote possibility. As the Ikle-Wohlstetter Commission reports, "the new technologies will enable us to use conventional weapons for many of the missions once assigned to nuclear weapons."<sup>32</sup> At the same time, the development of enhanced radiation/reduced blast (ER/RB) nuclear warheads has reduced the destructive power of small nuclear forces to the point that they become far more useful as means to destroy enemy troop concentrations without laying waste to the countryside. These so-called neutron warheads have less than 10 percent of the heat and blast effects of standard fission weapons, leave little or no residual radiation, and cause minimal collateral damage. The primary casualty-producing mechanisms of an ER weapon are the neutrons they generate, which are particularly effective against massed formations of tanks.<sup>33</sup> The use of these weapons to defeat Soviet OMGs or to support an operational counteroffensive thus becomes more credible.

In this light, the nuclear threshold, so sacred to political leaders and analysts for the past 40 years, needs redefinition. Technology is blurring the distinction between nuclear and conventional weapons at the battlefield level, and a new threshold structure is required. Rather than a simple McNamarian conventional-nuclear threshold, it is more constructive and realistic to articulate the two discreet thresholds that now exist: conventional-theater nuclear and theater nuclear-strategic nuclear.

*The conventional-theater nuclear threshold.* All the arguments above notwithstanding, there will always be a

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threshold between conventional weapons and nuclear systems, regardless of the relative destructive power involved. This is primarily a psychological phenomenon and is not readily amenable to change. Recognizing this reality, great care must be taken to retain the perceptual and practical distinction between conventional and nuclear weapons in NATO's operational plans. Accordingly, release procedures must remain centralized, and no effort should be made to tinker with the maintenance of absolute civilian control over any decision to cross this first threshold.

Once this threshold is crossed, however, it must not be assumed that the use of tactical or operational nuclear weapons necessarily means escalation to strategic nuclear exchange or even the inflicting of mass civilian casualties. Reinforcing the doctrine of Flexible Response and escalation control, NATO must make it clear that there is yet another, more substantial threshold to cross.

*The theater nuclear-strategic threshold.* Employment of nuclear weapons at the tactical and operational levels is primarily oriented toward targets directly affecting the outcome of battles and campaigns. Although nuclear attacks at these levels may result in civilian casualties, these will not necessarily exceed those expected in a conflict involving conventional weapons alone. Escalation beyond the tactical and operational levels has a far greater chance of causing massive civilian casualties, largely because strategic employment seeks far broader national political objectives and dictates a wider range of targets. An OMG is an appropriate target at the operational level; the economic infrastructure of the Soviet Union is reserved for strategic targeting. In the former case, the primary casualties would be soldiers; in the latter, great numbers of civilians could be expected to die.

Perhaps the most important distinction is that strategic nuclear weapons fall on the superpowers themselves,

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and their use can be expected to elicit a strategic nuclear attack in return. Emotional reaction notwithstanding, it is not at all clear that the employment of nuclear weapons below the strategic threshold would necessarily or logically escalate to strategic exchange.<sup>34</sup>

In the wake of the INF Treaty and the withdrawal of Pershing IIs and ground-launched cruise missiles (GLCM), the distinction between operational and strategic targeting has become clearer and the theater nuclear-strategic threshold has become more clearly defined. Raising this threshold is indeed an imperative for and a consequence of a new operational art for NATO. As with many issues in the maintenance of credible deterrence, there is a paradox in these thresholds: the lower the conventional-TNF threshold, the easier it becomes to deter aggression and to raise the TNF-strategic threshold.

#### EUROPEAN CONSIDERATIONS

ONE OF THE MANY paradoxes in NATO is that the most vociferous opponents of a revitalized Flexible Response are the very people the Alliance is designed to protect—the European publics. It is virtually a certainty that any new proposal such as that outlined above will elicit strong European reaction and resistance, particularly from the various peace and anti-nuclear groups.<sup>35</sup> Moreover, resistance will also emerge from more informed analysts and politicians of all political persuasions, reflecting the basic contradictions inherent in an alliance of unequal powers.

Europeans largely recognize that NATO has somehow worked for four decades and that “the longest period of peace in European history is inconceivable without the war-preventing effects of nuclear weapons.”<sup>36</sup> They are understandably reluctant to make



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fundamental changes, particularly when those changes appear to institutionalize the decoupling of the American strategic nuclear deterrent from Europe. The greatest fear in Europe is that the United States and the Soviet Union will reach an implicit understanding that any conflict between the superpowers would be limited to the European continent, thereby raising the probability of such a conflict occurring. Germans certainly do not share American perceptions on limited nuclear war; a war "limited" to Germany is total nuclear war for the Germans.<sup>37</sup> Nor are Europeans solely concerned with nuclear war on the continent. They are equally worried about the implications of an extended conventional war and the devastation that such a conflict would cause in Europe.<sup>38</sup>

Even more challenging is the erosion of the underlying rationale for the existence of the Alliance in the first place—Western perception of the Soviet threat. Gorbachev has been remarkably successful in convincing Europeans that the Soviet Union no longer poses a threat to European security. Although this perception of a diminished Soviet threat has not yet translated itself into calls for the dissolution of NATO, European attitudes will clearly not support the promulgation of a new and more assertive operational doctrine for the Alliance—witness the great divisions within NATO caused by the issue of SNF negotiations.

If, indeed, Gorbachev succeeds in institutionalizing his reforms and if the Soviet Union emerges as a benign participant in the international community, revitalizing Flexible Response becomes far less important. Indeed, under that scenario, the continued necessity for NATO itself becomes suspect. If, on the other hand, Gorbachev is unsuccessful and his regime is replaced by a neo-Stalinist one, the continued efficacy of NATO will be evident, and the need for an effective new NATO doctrine will be even more pressing.

A third scenario is also possible and represents the greatest danger to European security. Should Gorbachev

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be unsuccessful in his reforms and should it be impossible to contain the political forces he has unleashed, then the disintegration of the Soviet empire becomes a plausible reality. Such a disintegration may have begun in 1989 and 1990. As the Soviet leadership lurches about in a political maelstrom, the dangers of an irrational attack on the West grow. Certainly, we can find numerous examples of great powers attempting to redeem internal collapse with international aggression. Under this scenario, the post-Gorbachev world becomes far more dangerous than the more predictable Brezhnev era and requires a far stronger NATO—a NATO even more capable than that which kept the peace for the first 40 years of its existence.

The challenge for the United States, and indeed for the entire Alliance, is to prepare for the worst case while negotiating for the best. This challenge can be met only by careful development of a new operational art by military planners, but with the articulation of the new doctrine held in abeyance. Should the security situation in Europe change for the worse, and should the concept of operational deterrence be required, it would then be presented with details already developed. In any case, operational deterrence must be couched as a gradual, and often unstated, evolution of NATO's strategy as we move into a new and more demanding period of security in Europe.

This is not to say that the new doctrine will be without opposition. Even under worst-case circumstances, in which the Soviet threat dramatically reappears in the European psyche, a new operational deterrence will be met with considerable opposition. But this initial European hostility should not dissuade the United States from its efforts to secure its interests into the next century. Huntington's guidance is relevant:

Every new proposal has to go through a process of discussion, consideration, analysis, amendment, and often

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initial rejection before it becomes reality. This is true in military policy as well as domestic policy, and it is doubly true in *alliance* military policy.<sup>39</sup>

Moreover, the ultimate target of an operational deterrent is the Soviet Union, not European publics. This is the most important audience to which operational deterrence must play.

Therefore, if an integrated operational art for NATO makes sense, then the United States should not reject it *a priori* simply because of fears about undertaking a difficult and time-consuming political task. This sort of burden is, after all, the price of leadership in the Alliance.

EVEN THIS rather limited look at the Atlantic Alliance suggests that significant revisions are in order to ensure the continued viability of deterrence on the continent into the next century. If NATO is to restore the credibility of Flexible Response, an integrated nuclear-conventional doctrine at the operational level that confronts the most likely Soviet operational threat is essential. This operational art should take maximum advantage of emerging technologies, current NATO force dispositions and capabilities, and the efficacy of employing nuclear weapons in battle. More importantly, operational art should focus on Soviet centers of gravity, presenting the Soviet Union with the very real possibility that an invasion of Western Europe would result in far greater costs than are currently obvious, costs that would exceed the benefits Moscow might achieve. Only then can NATO compensate for the significant changes in the international environment that seem to be causing a major breakdown in the credibility of Flexible Response and, indeed, in the Alliance itself. Doing so is, by no means, a simple task, but it is necessary if the United States is to

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maintain its vital interests in Europe in the twenty-first century.

### NOTES

1. Harold Brown, "Nuclear War Strategy: PD-59," in *Nuclear Strategy, Arms Control, and the Future*, ed. by P. Edward Haley, David M. Keithly, and Jack Merritt (Boulder, Westview Press, 1985), p. 56.

2. Theodore Draper, "Nuclear Temptations," in *The Nuclear Reader*, ed. by Charles W. Kegley, Jr., and Eugene R. Wittkopf (New York, St. Martin's Press, Inc., 1985), p. 23.

3. Keith B. Payne, "Does the United States need a Nuclear War-fighting Doctrine and Strategy?" in *Military Strategy in Transition: Defense and Deterrence in the 1980s*, ed. by Keith A. Dunn and William O. Staudenmaier (Boulder, Westview Press, 1984), p. 181.

4. Samuel P. Huntington, "Conventional Deterrence and Conventional Retaliation in Europe," *International Security* 8, no. 3, Winter 1983/84, p. 83.

5. Fred C. Ikle and Albert Wohlstetter, *Discriminate Deterrence* (Washington, US Government Printing Office, 1988), p. 2. This document commands particular attention, not only for its far-reaching ideas but also for the members of the commission it represents. These members include Ikle and Wohlstetter as co-chairmen, Anne Armstrong, Zbigniew Brzezinski, William P. Clark, W. Graham Clayton, Jr., Andrew J. Goodpaster, James L. Holloway III, Samuel P. Huntington, Henry A. Kissinger, Joshua Lederberg, Bernard Z. Schriever, and John W. Vessey.

6. The Joint Staff, *Military Posture: FY 1989* (Washington, The Joint Chiefs of Staff, 1988), p. 51.

7. "Momentum Builds Toward INF Accord," *Arms Control Today* 17, no. 5, June, 1987, p. 19.

8. President Ronald Reagan, *National Security of the United States* (Washington, US Government Printing Office, 1988), p. 18.

9. Huntington, p. 34.

10. *Ibid.*, p. 54.

11. Henry A. Kissinger, "A Memo to the New President," *Newsweek*, September 19, 1988, p. 36.

12. Ikle and Wohlstetter, p. 28.

13. Huntington, p. 46.

14. This is hardly a surprising addition, not only because it makes sense but also because Huntington was a prominent member of Ikle's committee.

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15. Vernon A. Aspaturian, "The Anatomy of the Soviet Empire: Vulnerabilities and Strengths," in Dunn and Staudenmaier, p. 131.

16. General Andrew J. Goodpaster, General Franz-Joseph Schulze, Air Chief Marshal Sir Alasdair Steedman, Dr. William J. Perry, *Strengthening Conventional Defense in Europe* (Boulder, Westview Press, 1985), pp. 69-82. This chapter provides a concise program for enhancing FOFA capabilities at the conventional level. See also Ikle and Wohlstetter, pp. 29-30.

17. Ikle and Wohlstetter, p. 30.

18. C. N. Donnelly, "The Soviet Operational Maneuver Group: A New Challenge for NATO," *Military Review* 68, no. 3, March 1983. This is one of the more comprehensive reviews of the OMG and the danger it poses to NATO strategy.

19. William E. Odom, "Soviet Force Posture: Dilemmas and Directions," *Problems of Communism* 34, July-August, 1985, p. 5.

20. Theodore A. Postal, "Targeting," in Ashton B. Carter, John D. Steinbruner, and Charles A. Zraket, *Managing Nuclear Operations* (Washington, The Brookings Institute, 1987), p. 404.

21. Colonel General N. A. Lomov, "Modern Means of Waging War and Operational-level Strategy," in Haley, et al., p. 153.

22. Keith A. Dunn and William O. Staudenmaier, "A NATO Conventional Retaliatory Strategy," in Dunn and Staudenmaier, p. 202. Further critique is provided in Daniel S. Papp, "Potential Soviet Responses to a NATO Retaliatory Offensive Strategy," in Dunn and Staudenmaier; and Christopher Coker, "Discriminate Deterrence and the Alliance," *Strategic Review*, Spring 1988, pp. 51-58.

23. Colonel A. A. Sidorenko, "The Nature of the Offensive Under Conditions where Nuclear Weapons are Employed," in Haley, et al., p. 147.

24. Huntington, p. 42.

25. Daniel Charles, *Nuclear Planning in NATO* (Cambridge, Massachusetts, Ballinger Publishing Company, 1987), pp. xiv, 5, 78, 102. Ashton B. Carter, "Sources of Error and Uncertainty," in Carter, et al., pp. 616-618. Carter argues that the sources of uncertainty in nuclear operations include the lack of empirical data, no historical experience, no time to adjust once nuclear combat is joined, and the enormous consequences of even small mistakes. He is positing strategic nuclear exchange, but the same arguments obtain at the operational nuclear level.

26. Major General S. K. Il in, "The Morale Factor in Modern War," in Haley, et al., p. 158.

27. Catherine Kelleher, "NATO Nuclear Capabilities," in Carter, et al., p. 458. Charles, p. 103.

28. This argument presupposes, quite naturally, the existence of an echelon above corps to plan and execute an operational campaign.

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Such a structure does not effectively exist now. Jacqueline K. Davis and Robert L. Pfaltzgraff, Jr., *The Atlantic Alliance and U.S. Global Strategy* (Cambridge, Massachusetts, Institute for Foreign Policy Analysis, 1983), p. 35. John G. Hines and Phillip A. Petersen, "NATO and the Changing Soviet Concept of Control for the Theater of War," *Signal* 41, no. 9, May 1987, pp. 126-127, assert, "commanders above corps level are not there to direct corps commanders in the execution of a larger plan." This fundamental deficiency must be addressed by NATO, and this may be yet another beneficial offshoot of support for operational deterrence.

29. Basic US Army doctrine, as reflected in *FM 100-5*, allows for virtually no targeting outside of preplanned packages. Ironically, the Army trains its nuclear targeteers to be fully competent to target in a non-package driven general release scenario.

30. Kegley and Wittkopf, p. 277.

31. Odom, pp. 6-11, argues that this explosion in non-nuclear weapons technologies will drive the Soviets into the "Third Military Revolution."

32. Ikle and Wohlstetter, p. 8.

33. L. W. McNaught, *Nuclear Weapons and Their Effects* (London, Brassey's Defense Publishers, 1986), pp. 20-22.

34. This line of reasoning is implicit in the Ikle Commission's discussion of extreme threats. Ikle and Wohlstetter, pp. 33-37. Desmond Ball, "Can Nuclear War be Controlled?" in Kegley and Wittkopf, p. 271, says, "Among strategic analysts . . . the ascendant view is that it is possible to conduct limited and quite protracted nuclear exchange in such a way that escalation can be controlled and the war can be terminated at some less than all-out level." Paul Bracken, "War Termination," in Carter, et al., pp. 198-199, summarizes the view, "some level of rational behavior would most likely be preserved even in a nuclear war," and believes that nuclear war could, indeed, be terminated below the strategic threshold.

35. Specific European concerns would include (1) that the proposal was just another US attempt to cut costs, (2) that this was another example of America's elusive quest for "technological supremacy," (3) that it would threaten conventional arms limitations talks, (4) that it would merely hide reduction of the US commitment, (5) that it would institutionalize decoupling. Coker, p. 53. See also Richard Hart Sinnreich, "Strategic Implications of Doctrinal Change: A Case Analysis," in Dunn and Staudenmaier, p. 291.

36. Karl Kaiser, Georg Lieber, Alois Mertes, Franz-Josef Schulze, "Nuclear Weapons and the Preservation of Peace," in *Thinking About Nuclear Weapons*, ed. by Fred Holroyd (Dover, Massachusetts, Auburn House Publishing Company, 1985), p. 291. This piece, written by several German strategists, is a rebuttal to the suggestion that the United

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States adopt a "no first use" policy with respect to all nuclear weapons.

37. By contrast, Kissinger says, "the secret dream of every European is ... if there had to be a nuclear war, to have it conducted over their heads by the strategic forces of the United States and the Soviet Union." Charles, p. 124.

38. Robert Blackwill, "Conceptual Problems of Conventional Arms Control," *International Security* 12, no. 4, Spring 1988, p. 42.

39. Huntington, p. 55.

## US MILITARY STRATEGY: FORWARD AND MOBILE

ROBERT H. FOGLESONG

PLANNERS HAVE FOR MANY YEARS ACCEPTED THE LOGIC OF forward-deployed forces as an element of a national military strategy. Simply put, that logic argues for fighting an enemy as far forward as resources permit to prevent the enemy from either threatening your territory, threatening territory that may be of value to you, or occupying territory that may put him in a position to threaten such territories. The primary adversary of the United States for the last four decades has recognized the usefulness of including forward-deployed forces in its national military strategy. In addition to supporting the spread of Soviet communism, the Soviet Union's invasion of Afghanistan permitted forward deployment of forces to enhance defense of Russian borders. The establishment of the Warsaw Pact and the posturing of Soviet troops throughout Pact countries have permitted the Soviets to forward-deploy forces along much of their western boundary as part of a well-planned national military strategy.

The United States recognized on several occasions the advantages of forward-deploying forces as an element of its own national military strategy. During World Wars I and II, the United States government recognized a requirement to aid its allies in Europe and the Pacific, but it also had no desire to fight the enemy on US soil.

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Colonel Robert H. Foglesong, US Air Force, wrote this essay while serving as Professor of Joint and Combined Warfare at the National War College.



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The logic of forward defense is no different today. The United States would prefer to fight its enemies as far forward as possible to protect its home territories from direct attack. As a result, the nation has developed and supported a national military strategy incorporating forward-deployed forces to serve the best interests of the United States and its allies for the past several decades. The strategy has not been a cheap one to follow. Staging hundreds of thousands of troops and billions of dollars worth of equipment in distant locations drives up the price of such a strategy.<sup>1</sup>

Has it been worth the expense? Yes. A national military strategy incorporating forward deployment of forces has helped stop the expansion of Soviet influence in many parts of the world, met various threats by non-Soviet enemies on numerous occasions, and, most important, has helped reduce the possibility of a fight on US territory for many decades. Forward deployment has been as important as other elements of US strategy—deterrence, force projection, arms negotiations, and alliances, to mention a few.

So what's different today—why revisit the rationale for the adoption of such a national military strategy for the United States? Several relevant conditions have changed and others appear to be changing. The changed conditions are the increased cost of supporting a national military strategy that emphasizes forward-deployed forces, and the political climate that no longer generally welcomes US troops on foreign soil. The one big condition that may be changing is the degree of the threat that has traditionally encouraged the establishment of such a strategy. It is time to reevaluate options relative to forward-deploying troops and equipment, based on the dynamics of economic, political, and military effects on current US military strategy.

**REALISTIC ASSUMPTIONS AS  
A BASIS FOR A STRATEGY**

TO DEVELOP the appropriate national military strategy, a planner obviously needs keen foresight. Knowing what will happen in the future would allow one to tailor a strategy that would permit the United States to support its interests most effectively. But planners are not that good. Instead they must guess about what will happen in the future based on existing facts and trends. The price of guessing wrong can be devastating. For that reason, planning assumptions must be based on the best logic and must take into account as many considerations as possible. Let me offer five realistic assumptions.

The first assumption evolves from the question of whether the Soviet Union will actually begin, and then continue, to draw down conventional forces in Eastern Europe.<sup>2</sup> Although the Soviet Union may not actually decrease its conventional forces to the degree announced, it probably will reduce those forces. That alone would create a desired effect among Europe governments—the perception that the Soviets are acting in good faith to reduce the possibility of conventional war. It is not clear, however, that the forces and equipment the Soviets might withdraw are of sufficient quality to affect the outcome of a war in Western Europe. In other words, the Soviets may remove older equipment and inefficiently trained units rather than new equipment and better-trained, modernized forces. The fact that such moves may be of low quality will not negate Western Europe's perception that the Soviets have taken the initiative to reduce the risk of conventional war. It seems valid, therefore, to assume that the Soviets will continue to generate pressures on the United States to withdraw troops and equipment from Western Europe, as NATO allies reduce force structures in response to Soviet actions.

The second assumption is that the US national military strategy will have to accommodate a shrinking

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defense budget. During the early 1980s, the US annual budget increased as the economy permitted significant growth in revenues. Not only the defense portion of the budget but other parts of the budget as well consumed larger amounts of federal dollars. In the mid-1980s, Congress, the administration, and the citizens of the United States became increasingly concerned with the amount of new revenues necessary each year to fund an increasing difference between revenues and expenditures. New legislation required a steady reduction in deficit spending. That legislation, combined with the fact that over the last several decades the proportion of budgeted dollars spent on defense has steadily declined, makes it evident that the Defense Department cannot afford every program desired to support the national military strategy. Simply put, there will continue to be fiscal pressure to stabilize the defense budget at a level that will not permit the type of growth seen in the early 1980s.<sup>3</sup> A realistic assumption is that the defense budget will show no real growth after inflation until deficit reduction goals are met. This condition will directly affect the affordability of forward-deployed forces.

A third assumption involves the question of US military forces' access to foreign bases over the next decade. To forward-deploy forces and to continue to show a presence throughout the world, the United States must have convenient, reliable, and secure locations that permit any number of activities like refueling operations, communications, and maintenance. Over the last decade, a subtle resistance to US presence on foreign soil has become more and more apparent. Although many strong allies still permit US forces full access, others have become less eager for a variety of reasons. This trend will probably continue to create new problems over the next decade. Consequently, it is valid to assume that supporting the forward deployment of troops and equipment will become increasingly more difficult.<sup>4</sup>

#### *FORWARD, MOBILE MILITARY STRATEGY*

To orchestrate war in Europe will require a massive effort. Movement of troops and equipment by the Soviet Union and its Warsaw Pact allies will require a significant number of days and dedication of a large percentage of their transportation resources. Activity such as this will not go unnoticed by US and West European intelligence communities. For that reason, a surprise "bolt out of the blue" attack on Western Europe, or within the Pacific Basin, is not likely. The United States builds deployment plans based on a finite number of warning days thought to be realistic for the current Warsaw Pact force posture. However, the announced Soviet withdrawal of forces, especially offensive forces, gives reason to believe that various intelligence and monitoring mechanisms may provide even more warning of an impending attack than is provided today. If the Soviets continue to draw down conventional forces—in a way that truly creates an environment more defensive than offensive—a fourth assumption that may affect future national military strategy is that more warning will be available before a conventional Warsaw Pact attack can occur. That translates to more time for the United States and its allies to deploy troops and equipment before actual hostilities begin.

A final assumption about the shape of events in the world in the next decade involves the likelihood of low-intensity conflict harming the best interests of the United States.<sup>5</sup> Throughout the past decade, we have seen such activities involve US citizens, US holdings, or allies who support US national security interests. In some cases, the ability to respond quickly and with the appropriate amount of military force has permitted the advantage to stay with the United States or one of its allies. In other cases, even the mobility and forces the United States possesses today are not sufficient to offer the president all the options he probably would like to have available. There is no reason to believe that the low-intensity military activity that flourished in the 1980s will subside in

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the next decade. The transfer of high-technology weapons to Third World countries has provided many less stable and previously non-threatening governments with the capability of creating ominous situations throughout the world. The availability of chemical, biological, and fissionable materials will continue to provide the opportunity for big leverage in the hands of a radical government. Equally worrisome is Third World activity to enhance delivery systems that are capable of delivering weapons such as these over very long ranges. In the final analysis, a valid assumption for developing a national military strategy for the 1990s must take into account the proliferation of low-intensity activities that will require US presence.<sup>6</sup>

These five assumptions form a basis for discussion of the forward deployment element of US military strategy. These assumptions will affect, and any future national military strategy that evolves based on these assumptions will also necessarily involve, another element of US strategy—force projection. Although all elements of US military strategy are coupled, forward deployment and force projection are especially interconnected, since any reduction or improvement in one typically affects the other.

### IMPLICATIONS FOR THE NEXT DECADE

AN OBVIOUS RESULT of the political and fiscal pressures noted previously will be a smaller force structure to implement future national military strategy. Although combat capabilities may not decrease significantly as new technology is incorporated into various weapon systems, the numbers of troops, ships, and wings will probably continue to decrease. Fiscal pressures could mean fewer artillery rounds of the Army, fewer flying hours for the Air Force, or fewer steaming days for the Navy. These

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factors could dictate a less ready force as well as a smaller force. Assuming today's priorities for spending defense dollars will remain intact, readiness will not be further compromised to preserve current force structure numbers. In other words, because fiscal pressure will force a cut in either readiness or force structure, it seems prudent to assume that the cuts will be largely in force structure in order to protect readiness.

For any number of reasons based on such assumptions, it would seem logical to expect the number of deployed US forces to be reduced during the next decade. There is a common perception that deployed forces cost more to maintain than forces stationed in the United States. Although that perception is not always accurate, as will be discussed later, it is thought to be so by many members of Congress—the bankers for the defense budget. The desire for fiscal savings will therefore drive oversea numbers lower. In addition to the cost issue, political pressure to remove US military forces from foreign soil will continue to be generated by governments that have previously been happy to have the United States share in their protection. This consequence may be partially overcome by substituting one foreign base for another, although this solution can become cost prohibitive if not done carefully.

Reduced force structure and reduced forward-deployed forces lead to another implication for the future. The current active-duty to reserve ratio is based, in part, on how often and how many troops are forward-deployed. The necessity for an adequate pool of active-duty personnel to ensure a timely rotation of troops back to the United States is important for morale reasons. If the number of personnel forward-deployed is reduced, the number of active-duty troops needed to support the rotation pool is reduced. Consequently, the active-duty to reserve ratio can be reviewed for possible change.

As a corollary to the reduction of forces forward-deployed and the trend to reduce US presence on foreign

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soil for political reasons, it would seem prudent for the United States to cultivate relationships with those allies throughout the world with parallel political aims—and the real estate—that permit the United States to continue some degree of forward deployment of forces and to enhance its force projection opportunities. The United States would not likely accept a national military strategy that would bring back all of its forward-deployed combat forces, because the nation has too many vital interests around the world. Many of these interests will require US presence to ensure potential adversaries understand that the United States stands ready to fight to protect those interests if challenged. Therefore, through a smart foreign aid program, it would seem prudent to identify and support those bastions of cooperation that will continue to support security and friendship. Formal security alliances with these countries would serve the best interests of both governments.<sup>7</sup>

US interests overseas are not expected to decrease during the next decade—in fact they may increase. The Pacific Basin continues to expand economically, for example, and oil supplies from the Middle East are forecast to assume even more importance to both the United States and its allies. A less-deployed force structure in the next decade leads directly to a reduced presence and a reduced influence in both regions. To accommodate this apparent dilemma, the capability to move combat forces rapidly to those spots in the world where US interests are threatened takes on new importance. The leaner, meaner force structure expected to result from the fiscal and political pressures of the next decade will not be as effective as it should be unless it can be moved to those regions where the US political leadership deems it necessary to show resolve through some form of presence or even combat. Programs designed to enhance US capability for projecting military forces based in the continental United States will need priority to preserve the

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country's freedom of action. Mobility provided by fast sealift and airlift will be very important. Consequently, the requirements for lift to support the national military strategy developed for the next decade will need to be carefully reviewed and supported fiscally.

Other programs that enhance the capabilities of US combat forces to sustain combat and combat support activities will become increasingly important. As an example, although the political and economic cost of keeping *personnel* forward-deployed may force a reassessment of current commitments, the political and economic price for storing *materials* and *equipment* in forward-deployed locations may be much more acceptable.

The implications of increased warning time also can be significant. Because the number of deployed forces that can be pulled back to the United States will depend to some degree on US ability to forecast an aggressive act by a potential adversary and thereby posture forces to counter the threat, it would appear prudent to continue enhancing those capabilities that provide the national command authorities with as much warning as possible of an impending action. Every day of additional warning of an attack—if acted on—translates to another day to mobilize and deploy forces. Said another way, every day of advanced warning means fewer forces have to be permanently assigned overseas. Those systems that enhance US abilities to monitor the parts of the world that are of interest will play an even more important role in a national military strategy that incorporates a smaller forward-deployed force structure. Because many of these systems are based on foreign soil, the importance of alliances with selected allies becomes apparent. And equally important, continued access to outer space will be essential to providing the necessary surveillance.

As the number of soldiers forward-deployed is reduced and the size of the active personnel pool required to sustain current US forward-deployed posture



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is reviewed, a likely consequence will be additional reduction of active-duty personnel in favor of reserve forces. Although this change appears cost-effective to many DOD observers,<sup>8</sup> in reality, the cost of expanding the current reserve forces infrastructure to accommodate a large influx of new units may be as great as the cost of keeping them forward-deployed. Some units could be transferred to the reserve forces using the current infrastructure, but others would face the possibility of deactivation—affecting readiness in two ways. First, fewer combat forces would be available to help maintain the current US readiness posture. Second, reserve forces are just that—reserve forces. The bottom line: any significant shift of force structure toward reserve forces will affect the readiness of the US military forces.

An additional factor that may enter into the readiness equation is the effect of a congressionally directed change in spending priorities. Currently, readiness has a high priority within DOD.<sup>9</sup> Although modernization, force structure, and sustainability are all important considerations, readiness is the heart of the day-to-day US combat posture. But some observers argue that readiness can be turned off and on again like water from a faucet. This argument implies that the United States can take advantage of a potential period of reduced tensions with the Soviet Union to shift its priorities during the next decade. But because readiness is the heart of what soldiers do for a living day to day, it is very difficult to turn back on after it has been turned off. With a decline in readiness, morale goes down, retention goes down, the cost to replace lost personnel goes up, accident rates go up, and, worst of all, when the military is asked to perform a critical mission for the nation it is not ready. For these reasons, the warfighters will continue to give high priority to readiness over the next decade. But less money for day-to-day combat training will inevitably dictate a reduced readiness posture. That readiness has a high

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priority does not mean that the United States can ignore other critical elements of national defense such as sustainability, force structure, and modernization.

What all these assumptions imply is that the United States will have to accept a higher degree of risk over the next decade—more risk that it will not be able to respond everywhere it may want to in a timely manner, more risk that it will suffer a reduced influence around the world as US presence is reduced, more risk that it may not be able to defend allies as it once did, and more risk that it may not be able to secure its own territories. In short, the United States will have to accept **more risk** that it may not be able to meet national military objectives.<sup>10</sup>

#### A MODIFIED STRATEGY FOR THE NEXT DECADE

PLANNING FOR the next decade requires forward thinking rather than reaction to changes *after they occur*. The existing US defense strategy has been successful. The elements that compose that strategy—strong bilateral and multilateral alliances, arms negotiations, deterrence, forward-deployed forces, and force projection, to mention a few—have all played valuable roles in maintaining peace, ensuring US presence and influence are respected, and permitting rapid response in areas that require some form of armed intervention.<sup>11</sup> Without the political, fiscal, and other pressures affecting the current strategy, it would be desirable to retain that strategy. So although reality drives the United States modify its strategy to accommodate these pressures, a new national military strategy should include as much of the current strategy as possible, since the logic followed to construct it yesterday will still be valid tomorrow.

Alliances should continue to be a very important element of US military strategy. All assumptions relevant to developing a new strategy support the need for more and

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stronger alliances. Deterrence—both nuclear and conventional—has been a winner for many decades. But that element of US military strategy is valid and respected by a potential enemy only if the United States maintains a strong military capability and the will to use it to defend its interests. Although most assumptions appear to undermine this element of the national military strategy, the senior US leadership is clearly in favor of maintaining a strong military capability—only the level at which this capability is maintained is under review.

Force projection has also held a strong position as an element of US defense strategy. Because the United States relies heavily on a total force concept of an active duty force supplemented by a large, well-trained reserve force, being able to move those forces to locations where they would be employed to deter or participate in combat is essential. Weapon systems and lift capability have been procured with this element of the nation's strategy in mind. The combatant commanders, or CINCs, will be the first to remind us, though, that the United States still has significant shortages of lift, and that the country can do more to design equipment with strategic mobility in mind. But a reluctance to spend money on force projection initiatives, instead favoring other combat initiatives, should not be interpreted as anything other than an attempt to balance the way the defense budget is spread across the different elements of the national military strategy. Although force projection capabilities may suffer (with all other defense elements) from any reduction in defense spending, strategic assumptions and planning factors for the next decade clearly support force projection as even more important than in the past.

The element of US military strategy most affected by potential changes in the next decade is the ability to forward-deploy forces. Many of the assumptions about the next decade argue for a smaller deployed force structure. Political and fiscal pressures will make it very

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difficult to maintain the same level of deployed forces. Since it's impossible to decouple one element of national military strategy from the others, any reduction in forward-deployed forces will affect the US ability to deter, will increase the importance of alliances, and will create a greater dependence on the nation's ability to project forces.

With all these considerations in mind, a national military strategy for the next decade must recognize that change is inevitable. A new strategy should, it seems, be consistent with the current strategy yet accommodate changes in the world environment. Such a national military strategy must provide for the opportunity to accomplish the following national military objectives:

1. To deter nuclear and conventional war by demonstrating the United States can quickly respond to threats to its interests and alliances and sustain its response over the long haul if necessary.
2. If deterrence fails, to have an appropriately sized armed force ready to take the fight to the enemy and win.
3. To accommodate conflict short of conventional war by providing for a mobile, ready force capable of quickly arriving and fixing the situation until follow-on ready reserve forces arrive.

The national military objectives that will drive a modified national military strategy are similar to those that drive current strategy.<sup>12</sup> The major difference is the recognition that future political and fiscal pressures may necessitate a more mobile force structure, with forces home-stationed in the United States but able to respond to a variety of challenges ranging from conventional war to forms of low-intensity conflict. Such a new philosophy

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will require a forward, mobile national military strategy that permits rapid response as a partial substitute for forward-deployed forces.

### CONSIDERATIONS FOR A FORWARD, MOBILE NATIONAL MILITARY STRATEGY

BEFORE A REALISTIC national military strategy can be formulated and forces designed and sized to support it, planners must understand how much risk the president, Congress, and the American people are willing to accept. Is the increase in risk worth the savings that may accrue if forces are reduced or brought back from forward-deployed locations? There is no objective way to measure such an increase in risk; the traditional approach has been to depend on the judgment of senior statesmen, diplomats, and professional soldiers. The risk to US security and interests over the next decade is coupled to a new-found trust of the intent of the Soviet Union. If the senior US leadership is confident that the Soviet Union is truly interested in preventing war and will follow up on its initial gestures for conventional and nuclear arms reductions, the risk generated by reducing force structure and bringing home deployed forces may be acceptable. As mentioned earlier, actions based on misplaced trust can be very expensive if the Soviet Union is not as trustworthy as many Americans want to believe.

If the nation's military planners decide to accept the increased risk associated with reduction of force structure and redeployment of forces, the senior US leadership and US citizens must understand that the national military forces will be less capable of immediately responding to some threats. Put another way, the United States' ability to respond to unexpected actions by the Soviets or others will not be as good as it is with forces forward-deployed. Getting that message across will not be easy, because

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Americans have come to expect their military forces to operate at a level of readiness that precludes embarrassment. What this increase in the risk of not achieving national military objectives means is a less influential position in the world for the United States—a decline in influence that both friends and enemies will recognize.

Once the degree of risk to US security and interests—as measured by how successfully the nation can achieve its military objectives—is defined and accepted, defense planners can formulate a national military strategy and design forces to accomplish that strategy. The forward, mobile national military strategy I have postulated accepts a small increase in risk to US security and interests, yet retains as much of the flexibility in the current strategy as is feasible and affordable. Sizing a force to ensure a reasonable possibility of such strategy being successful will depend on several factors. The number of residual forward-deployed forces that the defense budget can afford will be an important planning consideration. Very few people are advocating bringing all oversea US forces home. Consequently, keeping those residual deployed forces in key locations will be important. The ability to strengthen and refine alliances with key allies in those important parts of the world where US interests are centered should permit adequate basing for the residual forward-deployed forces.

As part of a forward, mobile national military strategy, a military force sized to respond in those areas of the world where the United States has vital interests must be maintained in the United States. This force will have to stay at a high degree of readiness and be capable of immediate deployment. Still another part of the US military force—a ready reserve—must be available to deploy within a reasonable time to augment those ready forces and forces that will still be forward-deployed. The sizing of the force structure to support this triad—residual forward-deployed forces, immediate-response ready

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forces, and follow-on ready reserve forces—will require study and review by the various CINCs responsible for the warfighting activities within their respective theaters.

It is apparent that a forward, mobile national military strategy will require special consideration and priority for rapid transportation. If a larger portion of US national interests are to be guarded by forces stationed in the United States, the ability to move those ready forces to the point where they can influence the outcome of possible political or military actions will be critical. In addition, if forces are expected to fight upon arrival in areas of the world that have little or no US force structure in being, it may be necessary to rotate combat forces on a temporary basis through areas to which they would most likely be deployed, to permit them to be as familiar as possible with the environment where they will have to fight. Both acquiring additional lift and rotating troops to potential fighting locations will require the expenditure of some of the dollars saved by reducing overall force structure and home-basing troops in the United States.

Before accepting a forward, mobile national military strategy and sizing the appropriate force structure, planners need to better understand some important issues. Several of these issues are listed below:

1. There will be costs, in both dollars and readiness, of changing the active-to-reserve ratio of the current force structure. Although it appears convenient and economical, bringing forward-deployed forces home and placing them in the reserve forces may be neither convenient nor economical. As mentioned earlier, the effect on readiness must be better understood.

2. Increased lift capabilities will not be cheap. At first blush it may appear that bringing forward-deployed forces home will save money, but in some cases it may be cheaper to leave forces in key locations, thus saving

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steaming days in transit rather than providing for state-side facilities and rapid lift capabilities.

3. Bringing forces back from forward deployment will cause the US CINCs to lose some of their ability influence actions of the military forces of US allies.

4. The issue of how to convince the citizens of the United States to accept reduced capability will require some consideration. As decisions are made to reduce the defense budget and force a new defense strategy, everybody responsible for making those tough decisions should answer the mail on why the decisions were made and then accept the responsibility for the results. It would seem prudent for DOD to play a part in the public relations requirements of a defense strategy that accepts a higher risk in defending US national interests.

#### **A POSSIBLE COURSE OF ACTION**

FACED WITH CONTINUED Soviet pressures to reduce forward-deployed forces, internal fiscal pressure to reduce the defense budget, external political pressures to remove US forces from vital forward basing locations, and a myriad of other subtle pressures, further declines in both US force structure and numbers of forward-deployed troops should be expected. A four-point plan that offers the opportunity to relieve some of these pressures and yet meet the requirements of forward, mobile national military strategy is described below:

1. Assuming the infrastructure is adequate to accommodate the appropriate portion of forces, bring home a significant number of Army division equivalents. Keep a portion of this force structure in the active forces, ready to respond immediately to a crisis. Place another portion



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in the reserve forces with full equipment. Deactivate the final portion and, if permitted, leave its equipment in storage in the theater where US interests are most likely to be threatened.

2. Once the decision is made to accept a reduced US presence throughout the world, a review of the deployment schedule for naval forces will suggest retirement or transfer to reserve forces of a significant number of surface ships. Some current naval commitments will go unanswered. Another strong possibility is placing more naval air strength in the reserve forces.

3. As Army divisions are brought home and Army force structure is reduced, the Air Force can proportionally reduce its tactical fighter wings. As with the ground forces, part of the tactical fighter wing draw-down could be returned to the United States and maintained in the active forces at high readiness, prepared to return immediately to oversea locations. Another portion could be returned to the United States and placed in the reserve forces. The final portion would be deactivated.

4. Marine force structure would stay intact, since it most closely aligns with a forward, mobile national military strategy.

This process could result in the deactivation of significant military forces and the transfer of significant force structure to the reserve forces. It would require high states of readiness for selected units for immediate response to crises, and a lower state of readiness for the ready reserve forces that would arrive later to sustain the action initiated by the ready forces. It would require more lift than is currently available or programmed to be available, and it would require that immediate-response ground and air combat forces rotate to the locations to which they would most likely deploy.

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Savings from reduced force structure and less overseas basing would help pay for additional lift and for rotation of the immediate-response forces, in addition to helping stabilize the defense budget. The plan would partially satisfy political and fiscal pressures to reduce US overseas presence, and would help address other external pressures that may restrict US ability to operate on foreign soil. These measures would involve some increase in the risk that the United States might fail to achieve its security objectives as it has over the last several decades, and that US interests and the interests of its allies might be harder to defend.

This forward, mobile national military strategy represents only one option for addressing the nation's defense needs in the 1990s. Whatever the strategy, it will be important to plan for inevitable changes in the political and fiscal environments, rather than reacting to these changes after they occur. This proposed strategy appears to be a prudent approach to the challenges of the next decade. It retains most of the logic of the strategy that has enabled the United States to stay at peace and protect its interests throughout the world for several decades. Yet it provides the opportunity to take advantage of changing political and fiscal environments to make the best use of limited resources.

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## THE EDITOR

Thomas C. Gill is a writer-editor with the Research Directorate, Institute for National Strategic Studies, at the National Defense University. He has edited numerous books on national security affairs for the NDU Press. Since 1986 he has helped to administer and judge the annual Chairman, Joint Chiefs of Staff, Strategy Essay Competition, from which the best essays are selected for publication in *Essays on Strategy*. Mr. Gill studied English literature and American history at the University of Maryland, and is currently completing graduate work in rhetoric and linguistics at Maryland.

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